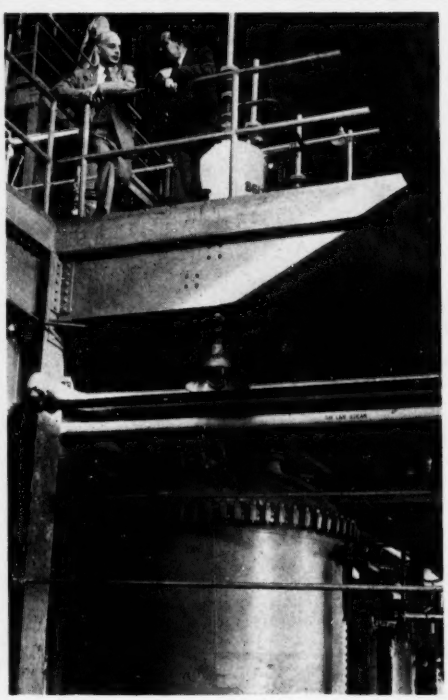
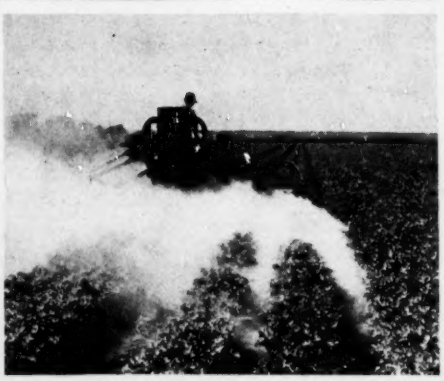
Chemical Week

January 24, 1953 Price 35 cents





They came, they saw; now British experts analyze our high productivity . . . . . p. 13

Researchers push rosin-in-rubber piloting; their goals: longer wear, lower cost . . . . . p. 29

CW Camera tours newest tonnage-size allethrin plant . . . . . p. 38

Insecticide makers fret as stocks pile up; their hope: a "buggy" year . . . . . p. 57

There's more to it than salt; chemical ice removers now sop up lots of corrosion curbers . . p. 62

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Chemical Week

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Chemical Week (including Chemical Specialties and Chemical Industries) is published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), founder. Publication Office: 1309 Noble St., Philadelphia 23, Pa.

Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President. Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions to Chemical Week are solicited in the chemical and process industries from management men in administration, research, production and distribution. Position and company connection must be indicated on subscription order. Address all subscription communications to Chemical Week Subscription Service, 1309 Noble St., Philadelphia 23, Pa., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address.

Single copies 35¢. Subscription rates—United States and Possessions $5.00 a year; $8.00 for two years; $10.00 for three years. Canada $6.00 a year; $10.00 for two years; $12.00 for three years. Other Western Hemisphere Countries $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries $25.00 a year; $40.00 for two years; $50.00 for three years. Entered as second class matter December 20, 1951, at the Post Office at Philadelphia 23, Pa., under the Act of March 3, 1879. Printed in U.S.A.

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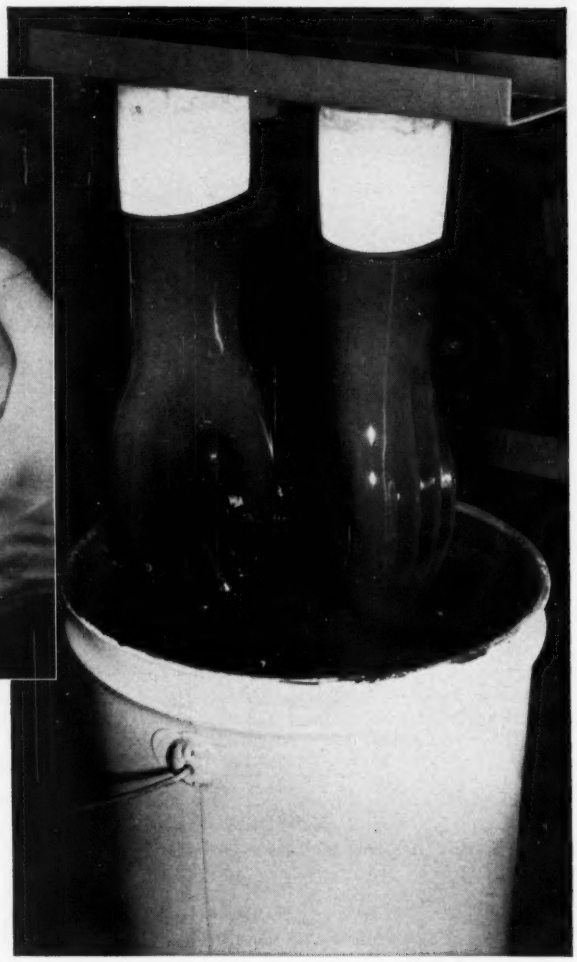
More new developments in AMERICAN ANODE *materials*



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OPINION.

Know What it is, But . . .

TO THE EDITOR: . . . I continue to find CW informative and readable . . . but how do you pronounce it—the word "automation" . . . ("Automatic Plants," Dec. 27) . . .

A. J. KELLY
Burkhart-Schier Chemical Co.
Chattanooga, Tenn.

Undictionaried, as yet, automation—with several possible pronunciations—is as controversial as schedule. (Some skools insist on skedule, other shools on shedule.) Our vote: like animation.—ED.

Ugh and Double-Ugh

TO THE EDITOR: Here I had always considered that you . . . had a fairly reasonable and slightly respectful attitude towards English as she is spoke, and then you let the Dec. 27 issue come out with "they administrate . . ." [a picture caption in the news story on "Women in Industry"] and ". . . she authored . . ." [in the report of emulsion-expert Helen Wasell's research.] Does writing about females upset someone?

I don't know the *origination* of these, but apparently they come from the thought that one should never use a two-syllable word when a four-syllable one would add to the pomposity of the statement. "Authored" is like "contacted," and one which I have recently seen in musical circles: "concertized." Ugh and double-ugh!

As the gal in the office says—keep up your indefatigable efforts . . .

JAMES J. DOHENY
Manager
Seventh National
Chemical Exposition
Chicago, Ill.

On tar-get, Reader Do-he-ny, with na-ry a com-ment from us.—ED.

Untapped Market

TO THE EDITOR: . . . I have seen a number of news items in your magazine discussing repellents for rabbits, deer, rodents, dogs, cats, mosquitoes and flies . . . but I've never seen anything about products to repel—but not kill—snakes . . .

This is a problem of rural residents . . . do you know of any such compounds . . . ?

C. WIGHT
Jacksonville, Fla.

That we don't, Reader Wight, though possibly some CW subscribers do. The only remedy we've heard of, and that's

Special Processes
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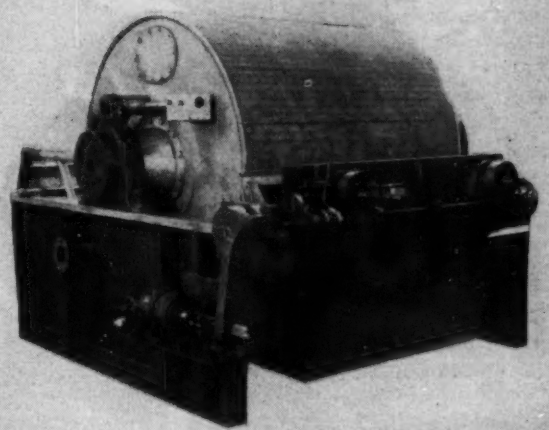

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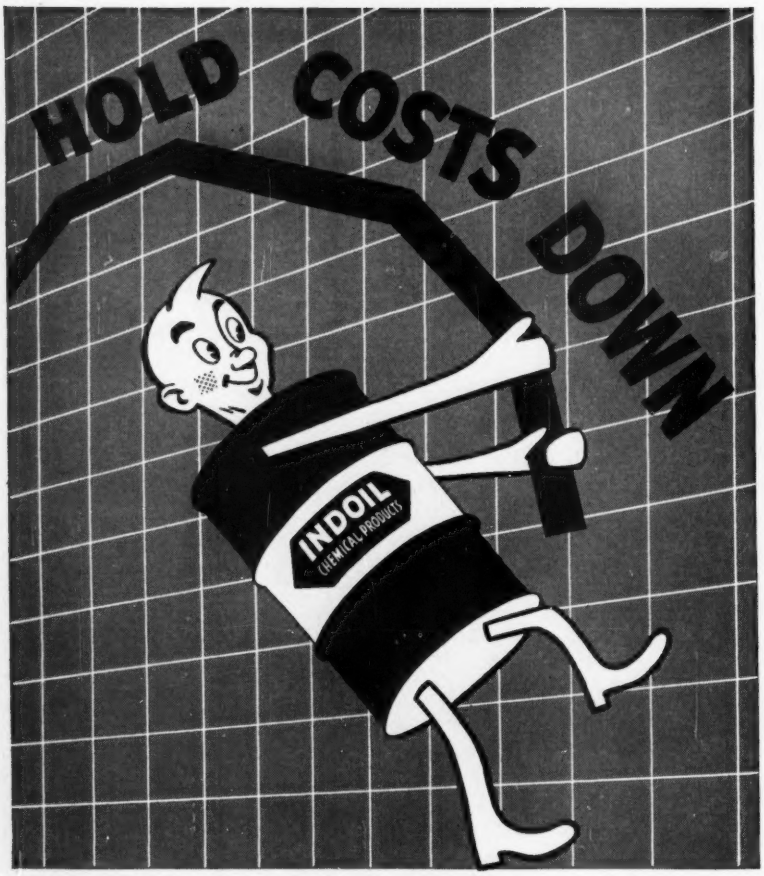

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OPINION . . . . . .

for purple snakes with pink stripes and yellow spots: Bromo-Seltzer.—ED.

Beware: Sciosophists

TO THE EDITOR: There is a good word to describe the endeavors of the "pseudo-scientific zealots and humbugs" against whom James B. Weaver warns us to be on guard [in his letter of Jan. 3] . . .

It is "sciosophy," which Webster defines as "pretended knowledge of natural or supernatural forces, systematized by tradition or *imaginative invention.*"

Let us beware, then, of sciosophic arguments . . .

GRANT E. SITA
New Providence, N. J.

"Sign of Immaturity"

TO THE EDITOR: . . . The arrival of the Jan. 3 issue of CW presents an opportunity for complimenting author John Sherwin on his excellent article "Chemical Export Selling . . . Past . . . Present . . . Future."

The instructions given to me by the then Secretary of Commerce, Mr. Herbert Hoover, when I first came to Washington in 1922 in response to his invitation to establish and head up the Chemical Division in the Bureau of Foreign and Domestic Commerce, was to foster, promote and develop the U. S. chemical industry at home and abroad.

In the early days there were relatively few people in the chemical industry who were interested in or had the know-how of export. It was therefore necessary to first create interest . . . then to teach our chemical people the principles and workings of foreign trade. That success attended our efforts is amply indicated by the great and constantly growing volume of chemicals and allied products in overseas operations . . . the many U. S. firms who now consider international affairs a major concern.

. . . Certain parts of the Sherwood article especially interest me—such as the paragraph referring to deep-seated changes that are in the making, and the reference to the world's rising standard of living.

. . . Reference to growth possibilities for specialized products attracts

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N.Y.

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BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

ORGANIC CHEMICALS DEPARTMENT

OPINION . . . . . .

my attention and the conclusion strikes a responsive chord re the companies which continue to feel that the necessary effort [to get foreign business] is not worthwhile, at least not while the domestic market still shows signs of health.

The chemical industry has notoriously played fast and loose in foreign trade, depending on whether business was bad or good at home. This is definitely a sign of immaturity . . . must be corrected if our chemical industry is to take its destined place as the world's leader . . .

C. C. CONCANNON
Chemical Division
National Production Authority
Dept. of Commerce,
Washington, D.C.

Pros and Cons

TO THE EDITOR: . . . Your article on the plans chemical companies have to sell stock to their employees (Jan. 10) is extraordinarily interesting . . .

It is my conviction that many people will never be completely "sold" on free enterprise until they are partners . . . and the ownership of stock makes them that . . .

T. H. CONWAY
Albany, N. Y.

TO THE EDITOR: . . . In your news report on stock ownership plans (Jan. 10) . . . you mention that firms feel that employee stock ownership is conducive to sound employee relations . . .

Perhaps that is so . . . particularly when an economy is going ahead . . . there are lots of plus values. But when I studied political economy, drawbacks were also mentioned . . .

If business gets bad an employee may have his salary or wages reduced . . . and also his "savings" dwindle if the stock goes down . . . as it probably would . . . That may pose employee relations problems, too . . .

ARNOLD S. MAYER
Urbana, Ill.

MEETINGS . .

Compressed Gas Assn., Inc., 40th annual meeting, Waldorf-Astoria, New York, N.Y., Jan. 26-27.

Manufacturing Chemists' Assn., Inc., 1953 industry conference on air pollution abatement, Hotel Statler, Detroit, Mich., Feb. 26-27.

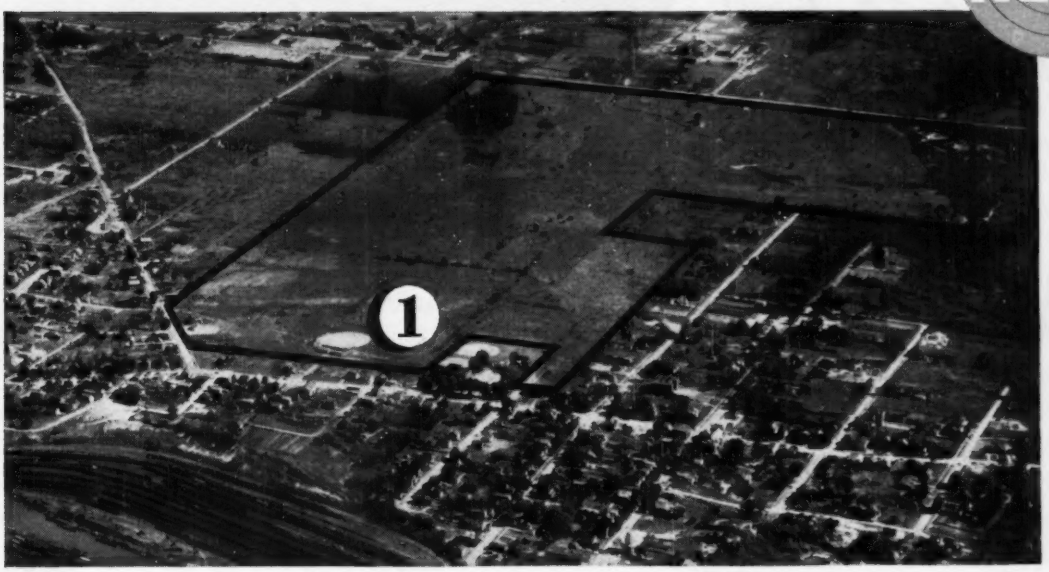
Nat'l Assn. of Corrosion Engineers, 1953 conference, Chicago, Ill., March 16-20.

Magnesium Assn., first Internat'l Magnesium Exposition, National Guard Armory, Washington, D.C., March 31-April 2.

BEST LOCATION IN THE NATION

Headline Industrial News from the Cleveland-Northeast Ohio Area

NEWS



① *Ashtabula City Site, 175 acres, 1½ miles north of main city district near Ashtabula harbor.*

2 LARGE NEW PLANT SITES NOW AVAILABLE ON LAKE ERIE'S "CHEMICAL SHORE"

Shown on this page are two outstanding new plant sites, both located in small-city or semi-rural areas within an hour and a half drive of Cleveland.

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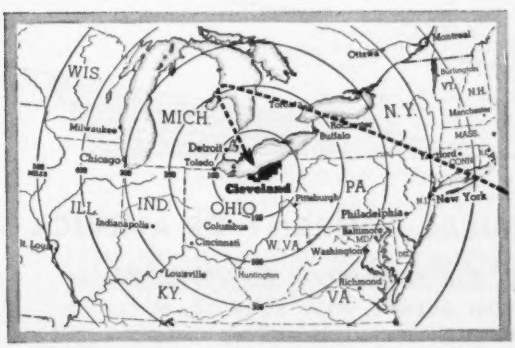
Utilities—Dependable electric power supply available from Cleveland Electric Illuminating Company 1,144,000-kilowatt interconnected system. Natural gas available in area. Unlimited fresh water from Lake Erie.

Nearby Communities—Ashtabula and Lake Counties have a combined population of 170,000. Both sites easily accessible by automobile or bus.



Low Taxes—Property taxes per $100 valuation are low in the two townships: Ashtabula $1.28; Perry $2.33. City of Ashtabula: $2.61.

A Rare Opportunity—Act Today

For complete information about either of these new sites and the opportunities for your company here, phone, wire or write Development Department, Richard L. DeChant, Manager. All inquiries held in strict confidence.

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NEWSLETTER

The mills of Congress are already grinding out bills pertaining to the chemical process industries. Many of them are "hardy perennials"—pet projects which legislators file and Congress forgets year after year. Whether they have a better chance in the new Congress is moot.

Control over fertilizers is the aim of H.R. 108, introduced by Usher L. Burdick (R., N.D.). It provides for compulsory registration, labeling and inspection of fertilizer materials in interstate commerce. Further, it would set up standards for contents.

Rapid tax write-offs for waste treatment facilities is provided by similar bills, H.R. 234 and 606, authored by John W. Byrnes (R., Wis.) and Richard M. Simpson (R., Penn.).

More rigid control of pesticides by requiring more detailed data on ingredients to appear on labels is desired by Frank E. Smith (D., Miss.), sponsor of H.R. 620.

Government backing of synthetic liquid fuels is promulgated by S. 6, introduced in the Senate by Pat McCarran (D., Nev.). He would provide for RFC loans up to $650 million at any one time; and if industry should be too slow (in the opinion of the Secretary of the Interior), the government could build plants, lease them to private operators.

Government research in air pollution would be intensified by the passage of House Joint Resolution 72, introduced by John H. Ray (R., N.Y.). Interior and U.S. Public Health would get money for their own investigations and for outside research contracts.

The decision may come soon on proposed rate hikes for power in the Niagara Falls area (CW Newsletter, Dec. 27, '52). The New York Public Service Commission has ended hearings, will now mull over testimony presented by the utility firm and its customers.

Final session highlights: Stauffer Chemical's counsel, Frank J. Clark, contended that the proposed increase would put his firm at a competitive disadvantage vis-à-vis other chlorine-caustic makers. And C. H. Stevens, consultant representing Hooker, Titanium Alloy, Vanadium Corp., Carborundum, Pittsburgh Metallurgical and Speer Carbon, pointed out that the area has "no particular advantages" save low power rates.

Atlas Powder's months-long attempt to win approval for its polyoxyethylene stearate bread softener under Food & Drug standards hit another snag last week when the U. S. Court of Appeals in Philadelphia denied the company's petition (CW Newsletter, Jan. 10) for a rehearing.

Next step: an appeal to the U. S. Supreme Court. In the meantime, Atlas can continue to sell Myrj for use in "standard" bread.

This was a week for hearings. Canada's tariff board has now launched a second survey of antifreeze prices throughout Canada. The first one showed wide disparity, the second was launched to confirm the earlier findings. The data will be complete, the board hopes, by March, when the finance minister will consider the tariff on U.S.-made material.

He may reduce or eliminate the import duty to stimulate competition and lower the price to the Canadian user if he thinks current retail prices are too high.

Meanwhile, Dow Chemical of Canada is urging the tariff board to slap a duty on ethylene glycol, which now enters duty-free. Dow's contention: Cheap imports threaten sale of the output from its $24-million plant at Sarnia. Firms operating solely within the U. S., however, naturally take a different view.

Proponents and opponents were also taking sides on two chemical cases pending this week in U. S. Customs Court.

In one case, the Court is deliberating whether a 50-50 mixture of polyethylene and microcrystalline wax (to coat bread wrappers) is "a manufacture of wax" (20% ad valorem) or "a synthetic gum or resin" (30% ad valorem). Du Pont and Bakelite chemists testified that the polyethylene in the mixture could be extracted, sold for less than made-in-U. S. A. product. Its molecular weight (about 15,000) is high enough to permit fabrication of bifers and films.

In the other case, Fallek Products Co. (New York) disputes the value assigned by the customs collector to two shipments of phthalic anhydride shipped from Belgium in 1949. He used the U. S. selling price, 21½¢/lb., as basis for duty; but Fallek contends that the Belgian value, 11¢, should have been used since domestic phthalic was obtainable at that time. How the court decides the issue may have considerable impact on the U. S. chemical industry whenever shortages occur in the future.

Krilium news was double-barreled last week as patents were issued and prices came down.

Monsanto now has U. S. Patents 2,625.471 and 2,625,529 relating to soil conditioners in general and Krilium formulations in particular. Covered: use of a large and diversified class of polyelectrolytes, including the polyacrylic acid type; mixtures of fertilizer and soil conditioners.

Buyers of five-pound cans will now pay $4.95 instead of $6.95, and the larger "economy sizes" are reduced equivalently.

"I know it's a miracle fabric, but is it any good?" That caption under a recent Satevepost cartoon underscores a problem besetting synthetic fiber makers and textile men alike—and they're getting vocal about their worries. Textile man John M. Reeves (Reeves Bros., N. Y.) this month cautioned manufacturers against suggesting in their ads that the fibers are "omnipotent in their perfection."

He was echoed last week by Carl Setterstrom, sales manager of Carbide & Carbon's textile fibers, who said that "miracle fiber" is not only inaccurate but offensive. Moreover, if performance fails to live up to extravagant claims, fiber identification on consumer goods will become a sales liability rather than an asset.

A sharp increase in the cost of doing business—that's the picture one gets from June-November sales and profit figures of both Dow Chemical and Hooker Electrochemical.

Dow's sales ($205 million) were up 2.3% from the 1951 period; but pre-tax profits ($47 million) were down 21%.

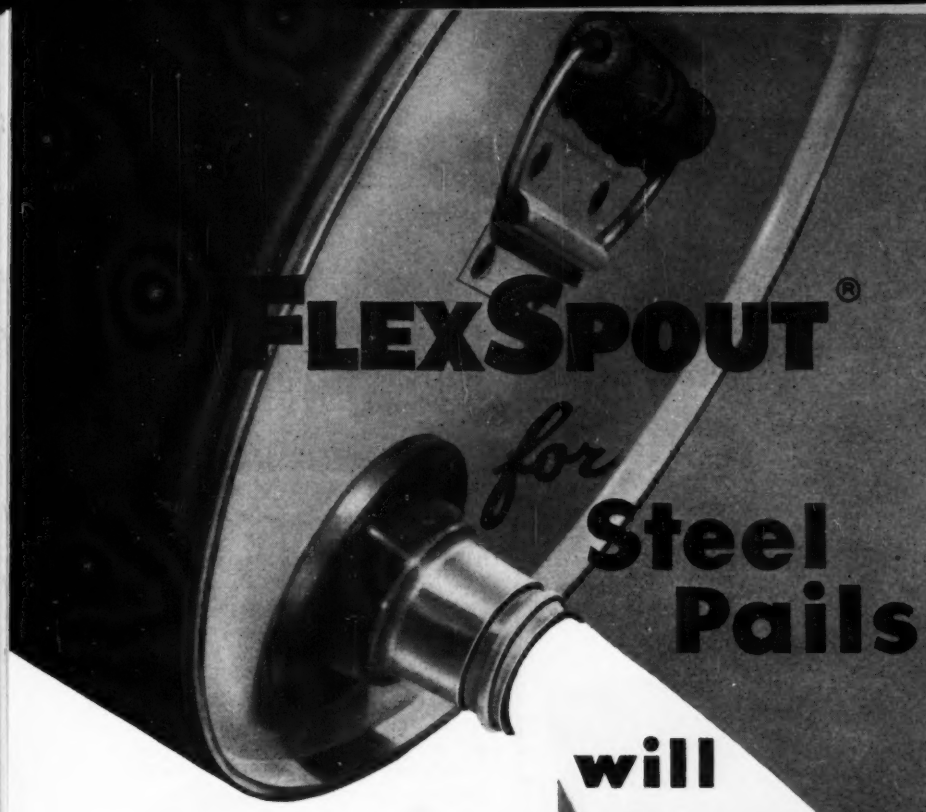
Hooker's sales ($17.6 million) were down 11.6%; pre-tax earnings (3.9 million), however, were down 30%.

The Broadway play, "One Bright Day," that had drug firms mad last year (CW Newsletter, Mar. 22, '52) because it portrayed some executives of a pharmaceutical manufacturing firm as negligent, "public-be-damned" hucksters, failed to make the grade on television last week.

Scheduled to appear on the Kraft Television Theater, it was cancelled. Its implications were considered "sensational and irresponsible."

. . . The Editors

FLEXSPOUT® for Steel Pails



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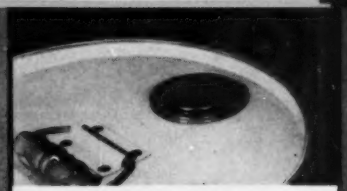

LEAKPROOF—One-piece molded plastic, sealed directly on pail metal. Stronger than pail itself.

EASY TO OPEN—Without special tools. Nail, screwdriver or any sharp object does the job.

FLEXIBLE POURING SPOUT—Extends for easy pouring. No muss or fuss . . . because only inside of spout touches liquid.

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FLEXSPOUT is a *lot* more than just another pail closure. It's a powerful sales tool that will help you sell *more* of any liquid packaged in steel pails. Every feature of this unique new closure adds up to customer satisfaction and extra sales appeal.

FLEXSPOUT is leakproof and tamperproof. It is easily opened with any pointed tool. It has a flexible pouring spout that extends for easy pouring, retracts out of the way for easy stacking and storage. A handy plastic screw cap permits tight, positive re-sealing.

Over 10,000,000 steel pails have been equipped with **FLEXSPOUT** during the past year. This better closure can do a better job for you, too. Write us today for further information . . . or fill out the coupon for a free sample.

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We'd like to know more about the new FLEXSPOUT Closure
Please send us... ☐ Free Sample ☐ Brochure

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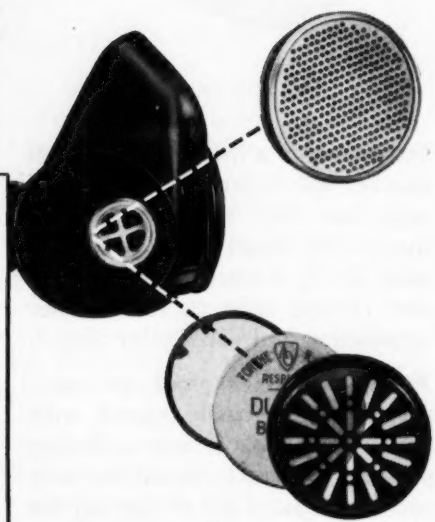
NEW AO RESPIRATOR LINE



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Yes, due to quick interchangeability of its threaded cartridges and disc type filter, the AO R5000 line of TWIN CARTRIDGE RESPIRATORS permits you to standardize on one respirator in protecting your workers against the multitude of dust, vapor and gas hazards commonly met with in industry. Remember, there's only one facepiece to stock and the R5000 offers greater visual area and many advanced construction features that mean added safety and comfort. Ask your nearest AO Safety Products Representative for the R5000. Tell him the respiratory hazards encountered in your operations and he will recommend the disc type filter and/or cartridges required.

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BUSINESS & INDUSTRY .....

Aluminum's Number Six

A new name—that of the Harvey Machine Co.—is soon to be added to the roster of primary aluminum producers as a result of the government's plans for a third round of aluminum expansion.

Harvey last week told plans for its $35 million reduction plant, to be built at The Dalles, Ore. (*CW, Nov. 29, '52*). The plant is to produce 54,000 tons of the metal yearly, first production is to hit the market in mid-1954.

In addition to the $35 million which is to be spent on reducing the alumina to the metal, Harvey also plans to spend $10 million to develop bauxite supplies and $20,250,000 for a plant to prepare the alumina for reduction.

Bauxite Base: Harvey has two tentative sources of bauxite in mind—the Guianas, in South America, and on Bintan Island, near Singapore. Harvey intended to use a bauxite mine in British Guiana owned by Berbice, Ltd., an American Cyanamid subsidiary, as its principal source, but is at present in court on the matter, since Berbice recently sold the mine to aluminum producer Reynolds Metals. Harvey contests this sale, claiming to have a sale agreement with Berbice preceding the one with Reynolds.

Methionine Third

The year-old mystery of what Du Pont would make at its Beaumont, Tex., plant site has been solved. The company's plans—until now a closely guarded secret—involve the production of methionine, a feed supplement for poultry and livestock.

Rumors and speculation concerning the intentions of Du Pont have been rife ever since the tract was purchased near McFaddin's bend on the Neches Ship Channel outside Beaumont, Tex. (*CW Newsletter, Jan. 5, '52*).

Cost of the initial installation at Beaumont is estimated at approximately $4 million.

Construction is expected to start by early spring of this year, subject to government approval. The unit, however, is only the first of several production installations slated for the site.

Operation is tentatively scheduled to get rolling by late 1954, will offer competition to Dow Chemical Co. and U.S. Industrial Chemicals, Inc.

THEY CAME, THEY SAW, THEY ENVIED: Anxious to find out what British heavy chemical companies can do to come closer to the productivity records of American firms, 17 Britons representing eight companies and three unions spent a month and a half visiting plants and offices of these U.S. concerns: Merck, American Cyanamid, Commercial Solvents, Freeport Sulfur, Shell Chemical, Dow, Consolidated Chemical Industries, Celanese, Stauffer, Western Electrochemical, Spencer, Monsanto, Pennsylvania Salt, Sharples, Koppers, Davison and Du Pont.

Open House on Output

Mellowed by the hospitality of the 17 Yankee chemical companies that held "open house" for them during their 8,000-mile tour in the United States last spring, members of a British industry-labor committee this week told what they think are the big reasons why heavy chemical plants in the U.S. are twice as effective as their British counterparts:

- "Investment in capital equipment per employee in the American heavy chemical industry is today some two to three times that in the British industry."
- "American companies had, on average, one technically qualified man to every six hourly-paid workers, whereas in Britain this ratio was about one to every sixteen."

Sponsored by the British (formerly Anglo-American) Productivity Council members of this heavy chemicals team also visited six plants in England and Wales before writing their 80-page report. In general, the team bestows unstinted praise on the American companies, although it holds that: "If measured by the percentage return on capital investment, the productivities of the American and British industries are approximately equal."

Prescription for Brainpower: In suggestions on how British chemical companies can improve their productivity rates, this 17-man team gives top priority to recruiting more scientists and engineers, in cooperation with colleges and universities.

The number of technical graduates in chemical companies should be increased as rapidly as possible, the group avers—"in some factories, even doubled." Another way of comparing the companies' personnel make-up in the two nations: In Britain, 28% of all employees are members of the salaried staff (administrative, technical, supervisory, research and sales); in the U.S., this figure appears to be around 40%.

"We found no greater nor more striking disparity than this," say the team members, "and we consider that from it must stem many of the differences in productivity."

Overburdened Technologists: After seeing how Yankee chemical plants operate, the Britons are advising English companies to help their technical staffs by transferring routine duties to the foremen, by providing non-graduate analysts to assist with process studies on shift work, and by wider

use of instrumentation and automatic control.

Labor unions can help increase British chemical productivity in three ways, the team members say. They recommend that unions:

- Liberalize the present apprenticeship system.
- Educate members on how the use of labor-saving equipment can help to raise the workers' standard of living.
- Increase the effective cooperation between local unions and factory managements to enhance productivity and thus boost the prosperity of both company and workers.

Relative unionization of chemical workers is greater in the United Kingdom than in America, the industrial entourage found. Team members noted that workers in America's "unorganized factories" generally had better rates of pay and working conditions, "a fact that could be interpreted to mean that in those factories the managements were avoiding unionization by keeping ahead of it."

Secrecy Decried: Impressed by the amount and value of detailed information that is freely circulated by industrial and governmental sources in the United States, the team urged that the Association of British Chemical Manufacturers consider setting up a joint committee with various government agencies to study American practice for adding to "industry's knowledge of its technical adequacy and progress."

The team's final bit of advice: standardize, cut number of products.

Heading the expedition was J. Grange Moore, deputy works manager for Imperial Chemical Industries in London. D. E. Ladhams, works manager for British Industrial Solvents, served as secretary. Other companies represented on this team were Hardman & Holden, Petrochemicals Ltd., Peter Spence & Sons, British Titan Products, Monsanto Chemicals Ltd., and A. Boake Roberts & Co. Seven of the delegates represented these labor unions: Union of Shop, Distributive & Allied Workers; Transport & General Workers' Union; and National Union of General & Municipal Workers.

While the team's recommendations are beamed at chemical firms in Britain, there's also a significance for managements on this side of the Atlantic: If these recommendations are the vitamins that will put health and vigor into English chemical plants, Yankee companies might want to check up and see if their own vitamin intake needs to be stepped up.

Risks Can Be Profitable

"Venture capital" — the words have been with us for many years, but the phrase has come into common use only since the war. Recognition, in fact has broadened to the point that the phrase is included in the 1951 Webster's dictionary.

Progress has been remarkable. While some groups have loaned venture capital for many years, the common practice has become established only during these past few years. Why? The tax situation. It is highly advantageous for an individual to invest to get a long-term capital gain—not cash income. Venture capital groups present the means.

An indication of its growing importance in the chemical field is its recognition in the forthcoming "Chemical Business Handbook," edited by John Perry. A chapter on the subject is being written by Du Pont's Roy Soukup.

Says Soukup, mushroom growth of the post-World War II industrial plant has had a parallel, though on a much smaller scale, in the growth in number and size of venture capital firms. These, he continues, "may be considered a special form of commercial development organization."

And while their total resources are not large in terms of the nation's economy, Soukup reports, "the principles on which these firms are based are finding readier reception in the financial field, and their influence is increasing steadily.

"They satisfy the deep-rooted demand of this country's economy for risk-taking money; they are backed by the interest and participation of leaders in finance, industry, science, and education; and they are attracting an increasing number of investors who wish to become backers of small businesses with unusual growth possibilities, and are willing and able to take the risks involved."

By Definition: Venture capital, says Soukup, is ownership capital with which the investor assumes a greater-than-ordinary risk—high chance of loss, but a balancing chance for considerable gain.

The tabulation (*see chart*) of venture capital companies, based on

Venture Capital Sources*

American Research and Development Corp. Boston	Boston New Products Research Corp. Boston
Atlas Corporation New York	William A. M. Burden, and Co. New York
Fiduciary Management, Inc. Madison, N.J.	Chicago Research Group Chicago
National Phoenix Industries, Inc. New York	Fox, Wells and Co. New York
Associated Development and Research Corp. New York	Guggenheim Brothers New York
Chemical Affiliates, Inc. New York	The Joseph Kennedy group New York
Chemical Development Corp. Danvers, Mass.	Keswick Corp. New York
Chemical Research Associates, Inc. Bernardsville, N.J.	The Mellon group Pittsburgh
Crosby Research Foundation, Inc. Los Angeles	Payson and Trask New York
Delaware Research and Development Corp. New Castle, Del.	The Providence group Providence, R.I.
Hodges Research and Development Co., Inc. New York	Rockefeller Brothers, Inc. New York
Industrial Capital Corp. San Francisco	The Rosenwall group New York
Inventors' Intermediaries, Inc. New York	The Ryan group New York
New Enterprises, Inc.	Henry Sears and Co. New York
	J. H. Whitney and Co. New York

* The listing, while comprehensive, cannot be complete. By definition are included companies with an objective of supplying venture capital to chemical process firms, and not those to whom supplying such capital is relatively incidental, *e.g.*, National Research Corp. and Lehman Corp. Such determination is often difficult. Also, some groups, with limited clerical and investigating staffs, prefer to remain unpublicized, making contacts through banks and business brokers. Other groups among the private corporation listings may not currently be active.

Soukup's lists, includes the groups whose main interest has been the supplying of such capital.

But the venture capital situation is still in flux. Some of the groups supplying this type of capital already object to the word "venture," since it seems to have gained the connotation of "flighty." Reason: Some people have entered the field to stay for only the minimum six-month period required to make a long-term tax gain. But those in the field who deplore this fly-by-night practice haven't come up as yet with a suitable substitute name.

Another change is taking place in the manner of investment. Prospective venture capitalists once would have invested their capital in, say, the common stock of a new concern to try to get a long-term gain. Now, more and more, they look for already operating companies in a high-excess-profits bracket which make a pre-tax profit great enough to pay for development work on a new invention.

Under both plans, if the new project is commercially successful, the investor has a long-term capital gain. But if it is unsuccessful—as a majority in even the chemical field still are—the investor is out only the net reduction in company dividend—figured after substraction of corporation income and excess profits taxes. Under the earlier plan, he would have had an expensive long-term capital loss.

The new plant in short, looks like a better way to spend money before taxes and get it back after taxes.

Investors' View: From the standpoint of the man with venture capital, though, such investing proves no sinecure. But there seem to be some specific attributes to the successful groups: Most obvious, are (1) the need for an ample supply of money, and (2) having a good investigative staff who can evaluate the proposals offered, and who have a knowledge of a wide enough field to give the venture group good diversification.

Equally important, however, is (3), having a group with no more than a single "decider." The well-publicized Enterprise Development Corp., formed in 1948, was unfortunate in having too many large investors with too many strong, and different opinions.

Investee's View: On the other side of the fence, there are many problems facing the person with a project. In looking for venture capital, he should realize that to get it, he will almost always have to give up control. If he is a good enough businessman (and bargainer), he may be able to get the money on a loan—usually drawn up in such a way that if he is successful, the lenders can convert their holdings into a majority (or at least strong minority) voting interest.

Du PONT's SOUKUP: New plants . . . new sources for money.

Many groups, too, require that a new invention or idea be protected by patent. From their standpoint, this is the only way to protect themselves from lawsuits.

Such a patent requirement is also a feature of many so-called research plans, closely related in end purpose to venture capital schemes. Two such plans are sponsored by United Dye and Chemical and by Sinclair Oil.

The requirement of patent protection, while preventing lawsuits, often may prevent significant invention. If an invention is far enough along to be patentable, it is often trivial. The value of a basic discovery is often curtailed by patenting too soon, since a premature application might not recognize the full value of the work, might limit it unnecessarily, or might be drawn up so as to be easily circumvented.

But none of the limitations seems to have cut down on the number of plans, inventions and ideas offered for commercialization. In the past, only a small fraction of the number could be realized. The ratio today is hardly different.

The greatest accomplishment of the venture capital funds, then, is not the bringing of more capital into the market, but bringing to fore a greater diversity of sources.

EXPANSION. . . .

Sulfur: Standard Sulphur Co. is preparing to start construction on a plant to recover sulfur by the Frasch process from the Damon, Big Creek and other mounds southwest of Houston. Plans call for completion of the plant by June, '53.

These mounds have been mined by Texas Gulf Sulphur Co. and Freeport Sulphur Co. in the past, but neither company is operating at either Damon or Big Creek now.

Standard will lease Damon Mound on a royalty basis from Texas Exploration Co.

•

Phosphorus: Shea Chemical Corp., Baltimore, Md., has recently started up a 30,000 kw phosphorus furnace, one of the world's largest.

This is the final step in a $3½-million expansion program at Shea's Columbia, Tenn., phosphate rock handling facilities.

Estimated output of the new furnace is 40 million lbs. of phosphorus annually—earmarked mainly for conversion to dicalcium phosphate and phosphoric acid.

•

Polystyrene: Dow Chemical Co. has begun construction of a plant at Torrance, Calif., to manufacture Styron polystyrene. Completion is scheduled for the fall of this year.

•

Sodium Silicate: Davison Chemical Corp. will enter sodium silicate production with the erection of a plant at Lake Charles, La.

Designed to produce sodium silicate in both solid and solution form, facilities at Lake Charles will have a capacity of about 300 tons per day—sufficient not only for the needs of Davison's plant but for other users.

•

Ammonia: Ground was broken this month for a $4,750,000 expansion of the Mississippi Chemical Corp.'s anhydrous ammonia and ammonium nitrate plant at Yazoo City.

The firm is financing $750,000 of the new funds under a BAWI (balanced agriculture with industry) bond issue.

The enlarged facilities are expected to have a maximum capacity of 180 tons of ammonia and 375 tons of nitrate per day.

•

Fertilizer: Davison Chemical Corp. will also build a $1-million fertilizer plant at New Albany, Ind. Operation is expected to commence early next fall.

•

Tall Oil: Crossett Chemical Co., Crossett, Ark., began operation this month of a new plant for the production of high-grade whole tall oil. Future plans call for the manufacture of refined oil as well.

SHAWINIGAN'S BARTRAM: From zealous free-trader, a call for tariffs.

Collision on Tariffs

An explosive reaction seemed imminent when Victor Bartram, president of Canada's Shawinigan Chemicals and an ardent advocate of free trade, accepted an invitation to speak on "The Chemical Industry in Canada" at this month's luncheon meeting of the Synthetic Organic Chemical Manufacturers Association of the United States, a leading proponent of high, protective tariffs.

But the reaction turned out to be only mildly exothermic, as Bartram diplomatically veered from his prepared text.* The speech that he brought to New York for the occasion included a proposal that Canada adopt an "aggressive" tariff policy as a bargaining instrument to get the U.S. to lower its "exorbitant" customs rates. In delivering the talk, however, he merely said he hoped the new Eisenhower administration "will take the lead in leveling tariffs to promote trade in both directions." This, he added, "would have a tremendous bearing on the future of humanity."

Even this moderate statement drew a few sparks. SOCMA Vice President P. K. Lawrence of Du Pont, acting chairman for the meeting, riposted by asserting that average ad valorem duty on imports into the United States was only 5% compared to 9% for Canada. (Chemical trade for 1951: U. S. sales to Canada, $155 million; Canadian sales to U. S., $66 million.)

Bartram's firm, blessed with an ample source of cheap electric power, is in an unusually strong position for the competitive struggle that would be likely if national tariff walls should be razed. But other chemical concerns in Canada aren't so fortunate.

For the benefit of the bulk of Canada's chemical processing industry, President R. S. Jane of the Chemical Institute of Canada holds that "a much greater measure of protection must be given" in higher Canadian tariff rates. Dr. Jane, who is vice president of Shawinigan, describes himself as "a staunch free-trader" but contends that he "can see no other solution to the problem facing our chemical industry in Canada" other than "building up a really effective tariff structure."

* Reporters for several business publications left the SOCMA meeting early, then wrote stories based on the advance text instead of on what the speaker actually said.

COMPANIES . . . .

Proposed stock sales were in the news this week:

• **Carborundum Co.** says that the Mellon interests are planning to dispose of approximately one-quarter of the more than 1 million shares of Carborundum common stock they now hold. Sale of these shares, however, would not affect Mellon control.

• **Liquid Carbonic Corp.'s** stockholders have approved an increase in authorized common stock of 800,000 shares of no par value.

The management does not have any immediate plans for issuing any of the new shares, but is negotiating for the purchase of another company, acquisition of which would require substantially all of the stock.

• **Basic Refractories Inc.'s** stockholders be asked to authorize 10,000 additional shares of preferred stock, and to grant options on 42,600 shares of common stock.

Both moves are aimed at raising $1 million for expansion and capital structure simplification.

• **Hooker Electrochemical Co.** has registered with the SEC a statement covering a proposed issue of 97,147 shares of convertible second preferred stock, convertible into common stock until Jan. 1, '63. The shares are to be offered for subscription to the company's common stockholders at the rate of one share of new preferred stock for each ten shares of common.

LABOR . . . . . .

CPI wages are still above the average for all manufacturing industries, say the latest figures compiled by the Bureau of Labor Statistics, but the all-manufacturing average is catching up. While chemical wages increased by about 5% during the past year, the all-manufacturing average climbed by nearly 8%. As of last October, hourly wage rates averaged $1.71 in the CPI, $1.70 for all manufacturing.

• Once considered unusually hazardous, chemical jobs now are among the safest in the world. One branch of the CPI—synthetic fibers—had the best safety record among all U.S. manufacturing lines in 1951, with only 1.7 disabling injuries for each million man-hours worked; while more than 70% of the chemical industry had lower injury-frequency rates than the all-manufacturing average of about 13.

• How well chemical workers like their job is indicated in the new report on labor turnover; the CPI's turnover rate is less than half as much as the all-manufacturing average. While the over-all number of persons quitting their jobs in November averaged 22 per 1,000 employees, the average in the chemical industry was only 9 per 1,000.

•

Union Claims Preeminence: Up in Canada, where labor unions are reported planning to concentrate on winning more fringe benefits this year, the Maple Leaf branch of the International Chemical Workers Union (AFL) is congratulating itself on having grown to more than 60 local unions with more than 10,000 members during the past eight years.

Conflict in Kentucky

The largest union and the largest company in the chemical processing industries are embroiled this week in a labor tussle at Louisville, Ky., where the International Chemical Workers Union (AFL) is making a last-ditch stand in its fight to represent employees at Du Pont's neoprene plant. ICWU, which so far holds just one bargaining agency among Du Pont's many works, is asking the National Labor Relations Board to throw out

ICWU'S BRADLEY: Suspicious of vacations.

ADVERTISEMENT—*This entire page is a paid advertisement* *Prepared by U. S. Industrial Chemicals Co.*

U.S.I. CHEMICAL NEWS

January 24 ★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1953

Develop Super-Stable Foam To Fight All Liquid Fires

A new all-purpose air foam, claimed to have an effective life almost 50 times greater than other stable foams, is now being marketed for use in extinguishing all types of flammable liquid fires. It is explained that while half the water drains from what is considered a good foam in 10 minutes, the half-way drainage time for the new product is 12 hours.

Described as a protein-base material which is used in a concentration of six parts compound to 94 parts water, the foam is said to be effective against fires of alcohol and other water soluble solvents as well as against gasoline, benzene, and oil fires. The product contains special ingredients to make the foam stable to alcohol, so that the bubbles formed are immune to the action of water soluble solvents which destroy ordinary foam as soon as it is laid on a fire. By contrast, blankets of the new foam can cover an extinguished fire for hours and thus prevent its re-ignition, it is said. The foam is also claimed to have excellent adhesion and to cling well to even hot, vertical surfaces.

New Extraction Method Yields Purer Fats, Oils

A new process, invented in England, is claimed to accomplish the extraction of fats and oils without the use of heat and to yield purer products than are now obtained by present methods. The process involves subjecting the animal or vegetable raw material to mechanical impulses which are passed through cold water. It is said to extract the fat without any of the unpleasant smell and discoloration inherent in older methods of using heat or hot solvents. The new process is also quick, and costs are said to be greatly reduced.

Commercially, the method has only been used so far to extract fat from bones. However, it has been used experimentally to obtain a herring oil so pure it could be used for edible purposes, and it is also adaptable to on-the-spot extraction of vegetable oils at the plantation. The proportion of oils extracted by the process is said to be much higher, and in the case of edible products, the vitamin content is doubled because no heat is required.

Soft X-Rays Hard on Molds

So-called soft X-rays were recently proposed as a new and relatively inexpensive means for preserving drugs and all types of food products. Research has shown that these radiations, produced at comparatively low voltages, are able to penetrate foodstuffs and kill molds, viruses, and other spoilage-causing microorganisms. It does not matter if the packaging is of paper, fiber, plastic, foil, glass, or metal, and the X-ray treatment does not require pre-heating or cooling. Thus vitamins and flavor of heat-sensitive foods are retained, and frozen materials can be completely sterilized without melting, it is said.

Metallic Sodium Produced by National Distillers Chemical Now Marketed by U.S.I.

Both Organizations are Divisions of National Distillers Products Corp.; Research Program Aims at Broadening Applications for Sodium

In June 1950, a huge battery of electrolytic cells, designed to deliver 100,000 pounds of sodium metal daily, was put into operation at the new National Distillers Chemical Co. plant in Ashtabula, Ohio. Since that date, production has increased each year, as National helps to supply the growing demands for sodium metal in the manufacture of tetraethyl lead, fatty alcohols, indigo and other synthetic dyes, sodium peroxide, pharmaceuticals, alkoxides, insecticides, and many other chemicals; as well as for industrial applications such as sodium-cooled valves and the descaling of steels.

Until September 1952, the manufacturing plant at Ashtabula handled all sales of metallic sodium. The growth of the operation dictated an expansion of sales and sales development activities, however, and responsibility for these operations was turned over to U.S.I., another division of National Distillers Products Corporation. Today, from its Chemical Sales Department in New York, and from all of its 18 offices across the country, U.S.I. offers metallic sodium in 1, 2½, 5 and 12 pound bricks in 55 gallon steel barrels; in 1 and 2 pound bricks in 3½ gallon steel pails; and in tank cars containing 80,000 pounds net.

MORE

Find Antibiotics Increase Absorption of Minerals

The apparent ability of antibiotics to enhance the absorption of mineral elements has been advanced as one of the possible explanations for their growth promoting effects in animals. Experimental evidence cited in support of this theory includes the findings that certain antibiotics, when fed to animals, improve absorption of calcium, increase bone calcification, decrease requirements for manganese, and improve utilization of calcium and phosphorus. Evidence has also been obtained which indicates that procaine penicillin decreases the pH of intestinal contents. This effect is said to undoubtedly favor an increase in absorption of relatively insoluble minerals, such as calcium, phosphorus, and manganese, by increasing their solubility.

The main cell room of National Distillers' new sodium plant contains 94 Downs cells in which sodium and chlorine are separated from fused sodium chloride by electrolysis. Electrically heated containers, left, keep the sodium molten while awaiting transfer to filters.

CONTINUED

Metallic Sodium

Sodium in Two New Forms

Research teams at National's Cincinnati laboratories have developed two innovations in sodium chemistry which are proving invaluable to industry—sodium dispersions in hydrocarbon solvents and on inert solid carriers. Stable dispersions in inert hydrocarbon solvents may contain up to 50 per cent by weight of sodium metal. Particle sizes range from 10 to 20 microns in diameter, giving a tremendous increase in surface area of sodium available for reaction. This in turn makes possible increased reaction rates, lower reaction temperatures and pressures, increased yields, and decreased side reactions.

Improved Reaction Control

As would be expected, sodium particles in such dispersions are usually completely consumed before reactivity can be slowed by a surface coating of end products. This uniform reactivity results in improved reaction control and permits commercial utilization of many reactions, such as phenyl sodium, formerly limited to the laboratory. In Claisen condensations, the reaction time can be cut to about one-tenth, and there is an accompanying decrease in side reactions and a marked increase in yield. Many direct metalations are possible, by-passing the necessity of using alkoxides, sodium hydride, etc., thereby reducing raw material costs as well as reaction time. These are but a few of the growing fields of applications for sodium.

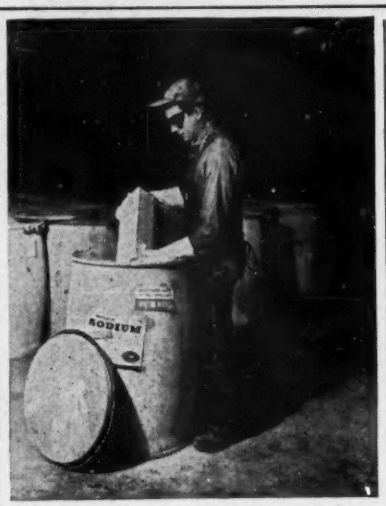
High Surface Sodium

Of more recent development, the second type of sodium dispersions—"High Surface Sodium"—consists of thin films of sodium over inert solid materials which present very large surface areas and make the metal available in substantially colloidal form. Depending on the carrier, 2 to 25 per cent of sodium can be adsorbed and handled as a free-flowing solid in fluidized and other moving solid systems.

High Surface Sodium offers all the advantages of sodium dispersions PLUS making sodium available for reaction in such a finely divided form that the colloidal particles approach the atomic diameter of sodium. Also it is readily adaptable to continuous operations at temperatures both above and below the melting point of sodium. Since the carriers are solids, e.g., salt, soda ash, carbon, and alumina, dry-way reactions are technically feasible and the hydrocarbon dispersing media used in preparing liquid dispersions are not required.

High Surface Sodium shows promise for purifying hydrocarbons such as in complete removal of sulfur from petroleum fractions, in the preparation of inorganic derivatives such as sodium hydride and sodamide, and in producing finely divided metals such as colloidal nickel and platinum for use as catalysts.

Technical bulletins on metallic sodium, sodium dispersions, High Surface Sodium, and sodium handling, as well as full information on shipments and prices, may be obtained by writing to U.S.I. at 120 Broadway, New York 5, N. Y., or to any of its branch offices.



Removing a 12-pound brick of sodium from a steel shipping barrel. Bricks are also available in 5, 2½, and 1-pound sizes.

TECHNICAL DEVELOPMENTS

Information about manufacturers of these items may be obtained by writing U. S. I.

To completely stop all rust inside fuel tanks, a cartridge of a new material dropped in once a year is all that is required, it is claimed. Compound is said to neutralize corrosion acids and deposit a protective film inside tank. **(No. 881)**

A hard-to-find 3-carbon molecule and a highly reactive aldehyde group is now available in a single compound for large-scale chemical syntheses. New intermediate is propionaldehyde, offered in tank car quantities in 95% minimum purity. **(No. 882)**

A new sound deadener for light metal equipment has a fluid consistency, can be applied by spray or with a wipe-on tool, dries rapidly, remains in place indefinitely, and stands baking as high as 325° F., the manufacturer states. **(No. 883)**

A combination fire retardant, water repellent, and fungicidal treatment for wood is recommended by the manufacturer for shingles, fences, furniture, etc. Material does not cause swelling, shrinking, or warping, it is said. **(No. 884)**

To keep leftover paints, enamels, and varnishes fresh and smooth for long periods of time, an oxidation inhibitor is available in liquid form which is claimed to eliminate necessity of straining or removing unusable skin. **(No. 885)**

Home owners can remove brown stains caused by copper screens on the outside of the house with a new product said to be harmless to outside paint. **(No. 886)**

A new ionic paint spray gun charges paint electrically before it leaves the gun so that it differentiates between painted and unpainted surfaces, gives an even finish, and penetrates into all cavities and crevices, according to the manufacturer. **(No. 887)**

True hiding power of paint can be reliably determined in 3 to 5 minutes, it is claimed, with a new instrument which gives the thickness of the paint in mils and the coverage in square feet at this thickness, as well as its most efficient hiding power. **(No. 888)**

A new rigid thermoplastic sheet stock is reported to be well suited to production of large area parts at high speed with low-cost heat forming and drawing methods, and to have a satin-like surface finish. **(No. 889)**

To evaluate an ink film's scuff or rub resistance on paper or paperboard, a new measuring device is available which controls and reproduces pressure, speed, and number of rubs. **(No. 890)**

PRODUCTS OF U. S. I.

ALCOHOLS
Amyl Alcohol (Isoamyl Alcohol)
Butanol (Normal-Butyl Alcohol)
Fusel Oil—Refined
Propanol (Normal-Propyl Alcohol)

Ethanol (Ethyl Alcohol)
Specially Denatured—all regular and anhydrous formulas
Completely Denatured—all regular and anhydrous formulas
Pure—190 proof U.S.P., Absolute—200 Proof
Solox*—proprietary solvent—regular and anhydrous

ANTI-FREEZE
Super Pyro* Anti-Freeze
U.S.I. Permanent Anti-Freeze

ETHERS
Ethyl Ether, U.S.P.
Ethyl Ether, Absolute—A.C.S.

ACETONE—A.C.S.

ANSOLS
Ansol* M
Ansol* PR

ACETIC ESTERS
Amyl Acetate—Commercial and High Test
Butyl Acetate
Ethyl Acetate—all grades
Normal-Propyl Acetate

OXALIC ESTERS
Dibutyl Oxalate
Diethyl Oxalate

PHTHALIC ESTERS
Diamyl Phthalate
Dibutyl Phthalate
Diethyl Phthalate

OTHER ESTERS
Diatol*
Diethyl Carbonate
Ethyl Chloroformate

RESINS (Synthetic and Natural)
Arochem*—modified types
Arodure*—urea-formaldehyde resins
Arofene*—pure phenolics
Aroflat*—for special flat finishes
Aroflint*—room temperature curing phenolic
Aroplaz*—alkyds and allied materials
Aropol†—copolymer modified alkyds
Ester Gums—all types
Natural Resins—all standard grades

INSECTICIDE MATERIALS
Allethrin
CPR Concentrates: Liquid & Dust
Piperonyl Butoxide
Piperonyl Cyclonene
Pyrenone* Concentrates: Liquid & Dust
Pyrethrum Products: Liquid and Dust
Rotenone Products: Liquid and Dust

INSECTIFUGE MATERIALS
Indalone*
Triple-Mix Repellents

INTERMEDIATES
Acetoacetanilide
Acetoacet-ortho-chloroanilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloroanilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate

FEED PRODUCTS
Calcium Pantothenate (Feed Grade)
Curbay B-G*
DL-Methionine (Feed Grade)
Niacin, U.S.P.
Riboflavin Concentrates
Special Liquid Curbay*
U.S.I. Vitamin B_{12} and Antibiotic Feed Supplements
Vacatone* 40

OTHER PRODUCTS
Acetaldehyde
Ethylene
IPC (Isopropyl-N-Phenyl Carbamate)
CIPC (Chloro-IPC)
Methionine (Pharm.)
Nitrocellulose Solns.
Propionaldehyde
Propionic Acid
Sodium Metal
Urethan, U.S.P.

*Reg. U.S. Pat. Off.
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Division of National Distillers Products Corporation

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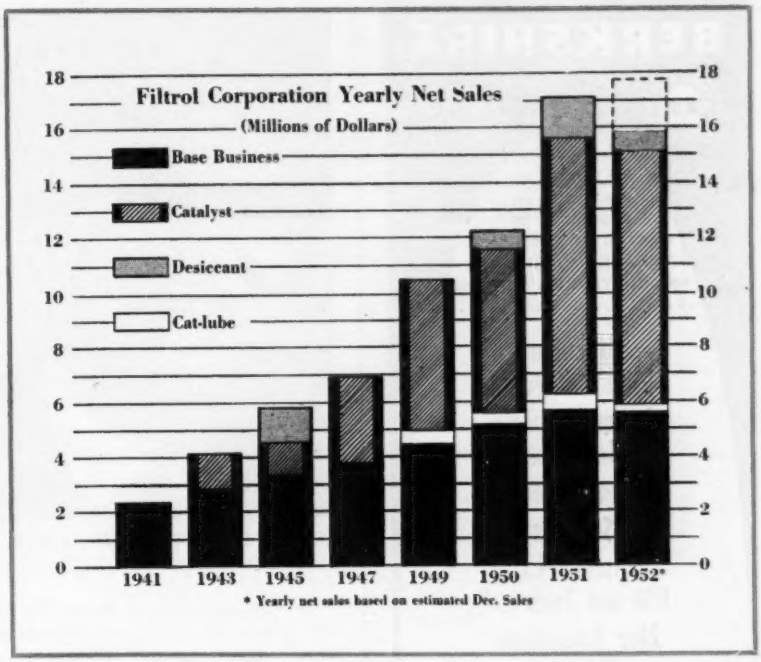
the results of a recent plant election on the grounds of company interference. Du Pont denies that it tried to pressure its employees, and the independent union that won the disputed election argues that it should be certified at once so it can negotiate a contract.

Collusion Charged: ICWU President H. A. Bradley, a seasoned campaigner of innumerable labor battles, has led his union through fat and lean years to a membership of some 115,000, now wants to accelerate his drive "to organize all men and women working in our jurisdiction." Biggest challenge for his organizing efforts are the 87,000 Du Pont employees, who up to now have shown little interest in national unions. Because it appeared last September that the neoprene plant force was about ready to embrace ICWU, Bradley and his crew naturally were vexed when the independent Neoprene Craftsmen's Union came out on top, 671 to 662, in a run-off election.

ICWU challenged 12 ballots, and took affidavits from a number of employees who said the company had tried to pressure them into voting for the independent union. In an NLRB hearing on the protest, ICWU alleged that T. J. Delaney, industrial relations manager at the neoprene plant, met twice with officials of the independent union to arrange for collaboration in the pre-election campaign; and that Du Pont sent letters to employees telling them that the independent union could get better benefits for them. Bradley also was irked because, he said, some of the persons who had given affidavits were out of town during the hearing because the company had granted them "extended vacations."

In NLRB's Lap: While the NLRB is deciding whether to recognize the independent union or give ICWU a chance in a new election, another aspect of the tangle is being studied in Louisville Circuit Court. Officers of the Affiliated Chemical Workers of Kentucky, the union that formerly represented neoprene employees, want the court to determine what should be done with the $33,000 that was in the union's treasury at the time that union met its doom in last September's first election.

This much was certain: With or without that $33,000, the bargaining agency at the neoprene plant would be a big victory for the Bradley crusade. An opposite outcome would be further indication that employees of big chemical companies have high sales resistance to unions.



GROWTH COMPANY: Sales have octupled over the past ten years.

Unscrambled Merger

Emerging from the merger with Filtrol of California last week, Filtrol Corp. officials capped a series of moves in financial style—a $15 million sales gain over the past ten years.

The series of moves began in 1935 when Filtrol was incorporated under an agreement between Filtrol of California and Attapulgus Clay Co., each of which received 50% of the common stock issued. (Attapulgus, at the time, was owned 50% by The Atlantic Refining Co. and 50% by Standard Oil of New Jersey.)

Last April F. Eberstadt & Co., Inc. and Lazard Frères & Co. bought Standard's interest for a cool $4.5 million.

Then this happened:

- On Nov. 26, '52, Attapulgus was liquidated. And in the liquidation, the three stockholders acquired their proportional number of shares of common stock of Filtrol.
- On Dec. 11, '52, the certificate of incorporation of Filtrol was amended to delete the original provision creating 2,000 shares of 1% preferred stock (at $1,500 par, none of which was outstanding), to reclassify the 10,000 shares of common stock, without par value, into 1,307,000 shares of common stock of $1 par value each, and to authorize a total of 1,500,000 shares of common stock.
- On Jan. 10, '53, the merger with Filtrol of California was signed, sealed, and legalized. (It had previously been adopted by the Filtrol stockholders on Dec. 8, '52, and by stockholders of Filtrol of Calif., Dec. 26, '52.) Out of the deal, California's stockholders received a three for one ticket: three shares of common of Filtrol for each share of California, and handed over, in return, to Filtrol, certificates for the entire California cut in Filtrol of Del. —653,500 shares.
- The remaining chunk (50% split between Atlantic Refining, Lazard Frères and Eberstadt) was simultaneously put on the block, as a secondary offering, and was declared oversubscribed by its underwriters last week (*CW, Jan. 17*).

What makes the $: Primarily a producer of clay catalysts used in cracking petroleum and of clay adsorbents used for refining lubricating oils, waxes and fats, Filtrol has recently put another iron in the fire. Its recent contract with Shell (*CW, Sept. 20*), whereby Shell upon completion of construction work at Vernon, Calif. agrees to deliver free all sulfuric acid and ammonia Filtrol needs and foots production costs in return for delivery of all ammonium sulfate produced (estimated at over 10,000 tons annually), accomplishes a quadruple purpose:

- Filtrol solves its disposal problem

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Ammonium Metavanadate
Boron, Amorphous
Lead Cyanamide
Barium Chloride
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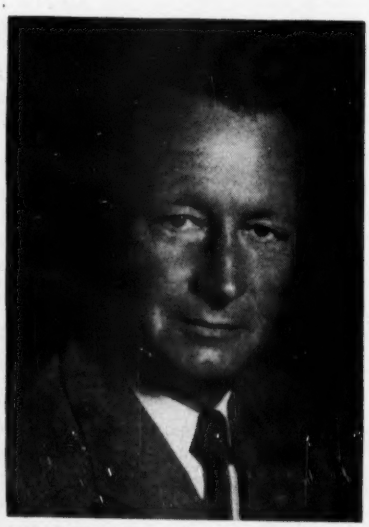
MYRON BANTRELL: Merger tends to strengthen corporation.

—the neutralization of about 3½ million gallons of highly acid effluent per week, saves around $500,000 annually.

• It ducks a possible community relations squabble such as arose at its Jackson, Miss. plant when drought inhibited river flow, and rendered it inadequate to permit full discharge of impounded effluent. Result at Jackson: extra cash outlay to increase impounding capacity, and a $6,000 fine for alleged violation of the Miss. State Game and Fish Commission relative to water pollution.

• It gets an assist in amortizing the capital investment of its by-product plant sale of ammonium sulfate to Shell, says Board Chairman, Myron Bantrell.



WRIGHT GARY: Finds a practical solution to waste problem.

• The alumina and magnesia produced in the operation represents pure gravy to Filtrol. President Wright Gary 'hopes' to cash it in—perhaps in the form of sale as a catalyst in hydroforming due to its purity and low cost.

The Big Push: Now Filtrol is neatly ensconced in the synthetic catalyst business; its corporate set up is simpler, stronger; and saleswise it has pushed up from the meager $2 million of a decade ago to a "right satisfactory" $17 million today.

FOREIGN . . . . .

Soda/Amsterdam: With the cooperation of American technicians in design, construction, and initial production work, a soda factory is to be set up at Delfzyl, province of Groningen.

Cost, including harbor changes and the laying of a pipeline, is estimated at 50 million guilders.

•

Caustic Soda/India: A caustic soda plant has been opened in Travancore by Travancore-Cochin Chemicals Ltd. Production capacity: 20 tons daily, with output earmarked for India's rayon industry.

•

Soda/Canada: Operations will commence soon on a $3 million plant at Marathon, Ont., to be run by the Marathon Paper Mills of Canada.

Touted as being the first Western Hemisphere plant of its kind to produce caustic soda and sodium sulfite simultaneously, it will channel its products to the manufacture of bleached sulfite pulp.

•

Nitrates/Italy: A new sector of the Montecatini plant, Novara, which manufactures nitrate fertilizers, has just come into production. It is said to be the first unit in Italy to use methane as a starting point.

•

Calcium Carbide/Philippines: Maria Cristina Industries, Inc., P.I., has ordered a carbide furnace in Norway to be installed at the Maria Cristina hydroelectric plant, Mindanao.

The furnace, a rotating type, can be used to make either alloys or calcium carbide, neither of which has been heretofore produced in the Philippines.

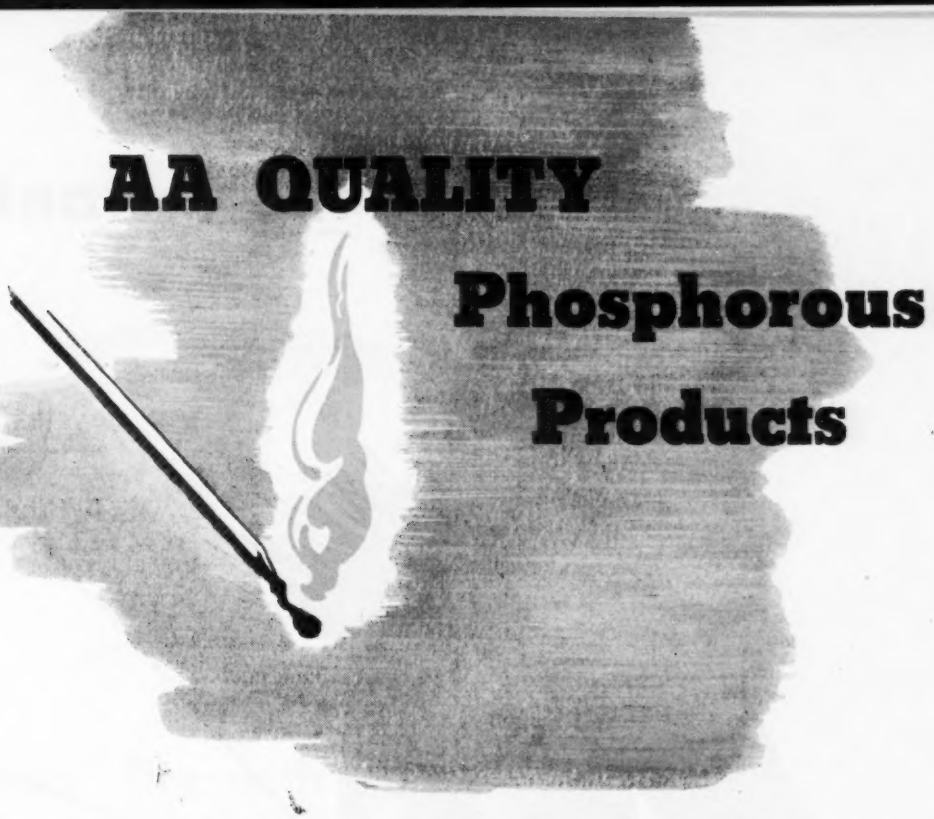
Manufacture of calcium cyanamide will be considered later.

•

Titanium Dioxide/Japan: Glidden Co., Cleveland, has finalized an agreement with the Ishihara Chemical Co., Tokyo, to make available to the Japanese firm its processes to produce titanium dioxide.

Ishihara will soon start construction

AA QUALITY Phosphorous Products



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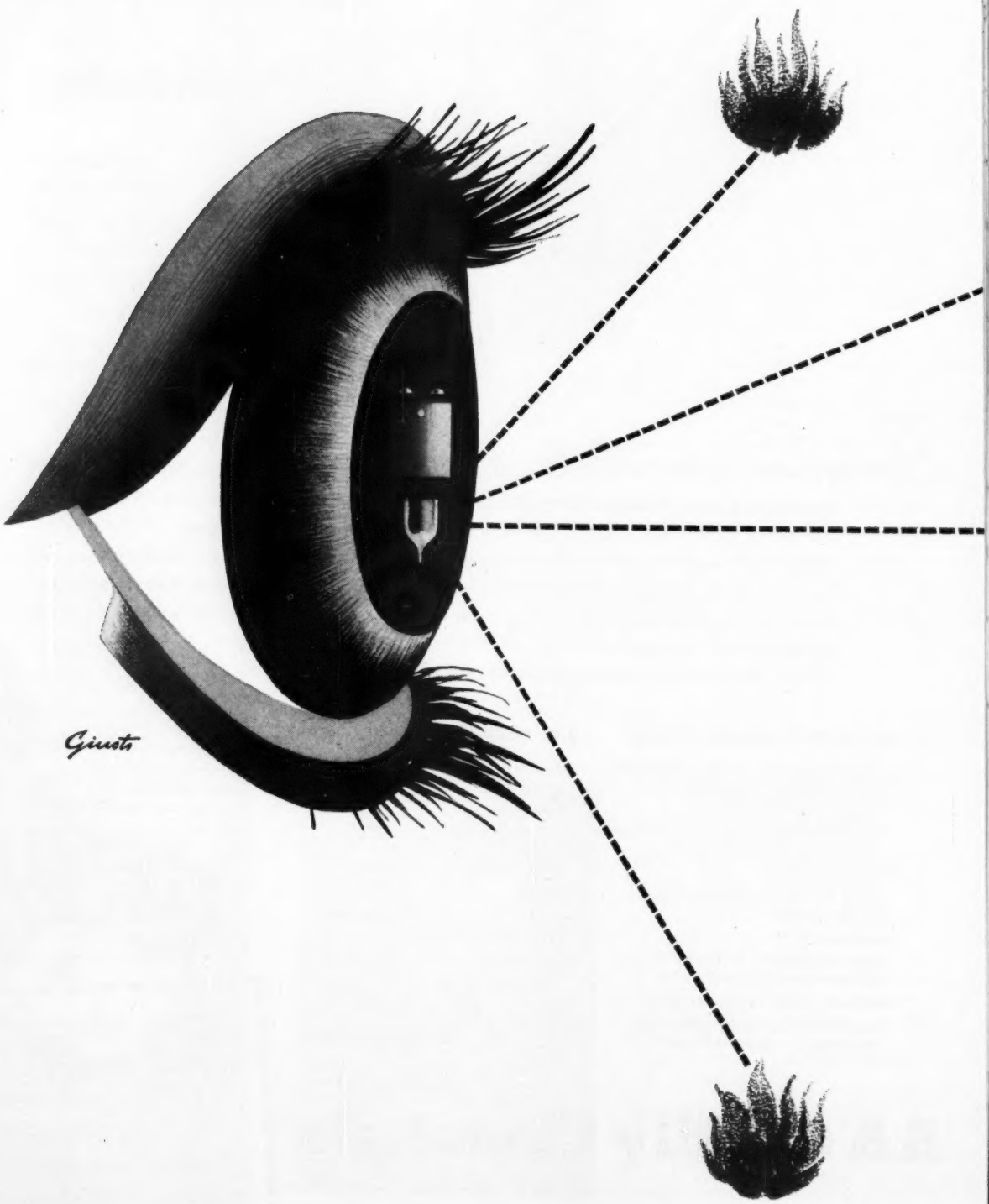

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Are you sure of your fire protection?
With Fireye you really know!

Fireye is its own policeman—automatically supervising every electronic component part—automatically and *continuously* reporting on the job by the constant flashing of a pulse light on the control panel—automatically discriminating against other light.

A failure in *any* part of the system is indicated immediately by the trouble light and an audible trouble signal . . . *so with Fireye you know your fire detection system is on the job—not just on the premises!*

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. . . . . .

of a $6 million plant, one of the largest in the Orient.

Glidden receives, in return, stock in the Japanese concern, a down payment in dollars, and royalty payment. It also will have rights to any new processes developed at the Ishihara plant.

LEGAL. . . . . .

Fountain of Youth: The Federal Trade Commission is challenging the advertising claim that Rybutol, a drug preparation, is an effective treatment for such symptoms of old age as aches, pains, nervousness, fatigue, poor appetite and insomnia. FTC has filed a complaint against VCA Laboratories and Vitamin Corporation of America, Newark, N.J. It also takes exception to the advertising statement that the human body cannot store certain factors of the vitamin B complex for more than a few hours.

•

Justice Is Costly: Faced with the prospect of paying a $30,000 printer's bill, the 8,485 claimants in the Texas City fertilizer explosion case are asking the U.S. Supreme Court to relax its rule on printing the record of previous proceedings. In this case, pending ever since the 1947 explosion of ammonium nitrate aboard two ships moored at Texas City, the record has snowballed to a mountainous 27,776 pages. Supreme Court rules require that whoever appeals a case to the high court must have the entire record printed by letter press on pages 6¼" x 9¼".

The claimants—insurance companies, local concerns and individuals sustaining losses and damages in the blast—want the Supreme Court to overrule the New Orleans Circuit Court, which held that the U.S. Government wouldn't have to pay the $350 million for which the claimants are suing.

•

Cellophane Trial Ends: As the evidence piled ceilingward in the big Du Pont-General Motors-U.S. Rubber case at Chicago this week, the trial of another antitrust case against Du Pont came to an end in Wilmington, Del. After 61 days of trial spread over a two-year period, Du Pont's chief counsel Gerhard A. Gesell presented his closing arguments and antitrusters James L. Minicus and Joseph M. Fitzpatrick made a rebuttal for the government. Judge Paul Leahy now will decide whether the government has proved its charges that Du Pont has a cellophane monopoly that's in violation of the Sherman Antitrust Act.

•

No Coaching From the Bench: U.S.

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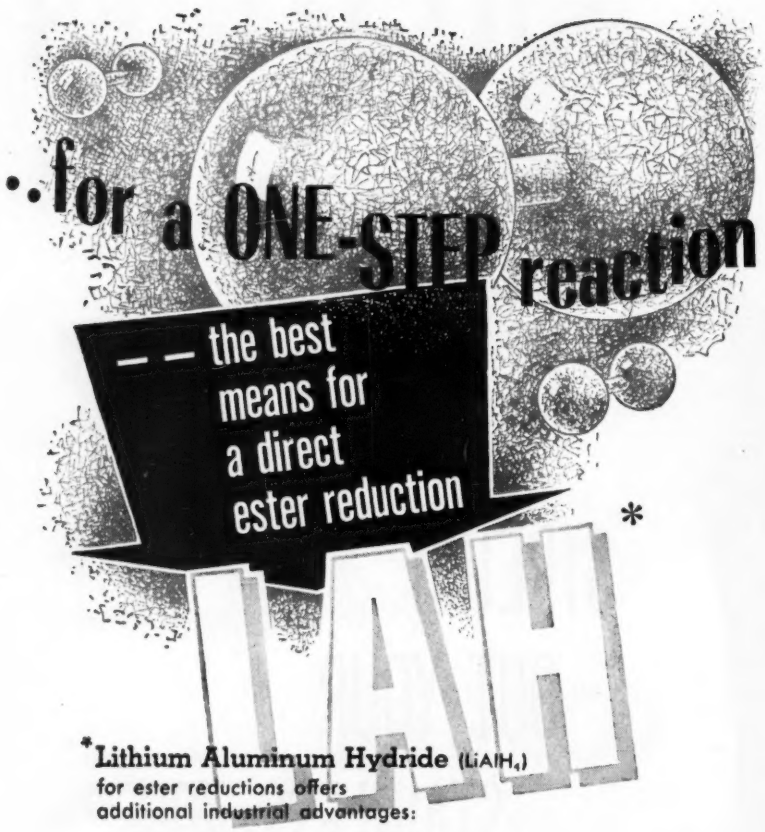

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LAH • reaction usually goes at room temperature

LAH • generally high yields

LAH • generally no side reactions

LAH • reduction goes all the way to the primary alcohol

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District Judge Sylvester J. Ryan refuses to tell Imperial Chemical Industries how to argue its law cases. Ephraim Jacobs of the Justice Department's Antitrust Division, perturbed because a British court has enjoined ICI from carrying out a U.S. court order to reassign the British nylon patent to Du Pont, suggested that Ryan order ICI to present to that British court some of the documents used as evidence in the ICI-Du Pont antitrust case. Ryan replied that he feels ICI has an obligation to present to the British court "all the facts upon which my judgment was predicated; but as to how that should be done, I leave that to ICI's good judgment and discretion."

•

Yeast Case Subsides: Stating that the manufacturer of "Ironized Yeast Tablets" has discontinued the use of advertising statements attacked by the Federal Trade Commission as "false," the FTC is dismissing its complaint against Sterling Drug, Inc., and its advertising agency. FTC says Sterling has revised its advertising "to inform the public of limitations to the effectiveness of the preparation."

KEY CHANGES. . .

Fritz Degener: To general sales manager of chemicals, Heyden Chemical Corp., New York, N.Y.

Emil Schlittler: To director of chemical research, Ciba Pharmaceutical Products, Inc., Summit, N.J.

William P. Gage: To president and director, Grace Chemical Co., New York, N.Y.

Karl Pfister: To director of process research, Merck & Co., Inc., Rahway, N.J.

Lewis H. Sarett: To director of synthetic medicinals research, Merck & Co., Inc., Rahway, N.J.

F. L. Bryant: To superintendent of Niagara Falls plant, Hooker Electrochemical Co., Niagara Falls, N.Y.

Denton Anderson: To vice president, Plax Corp., West Hartford, Conn.

William L. Sims, 2nd: To president, Colgate-Palmolive International, Jersey City, N.J.

A. L. Lyman: To executive vice president, California Research Corp., Richmond, Calif.

Charles P. Walker Jr.: To vice president, Van Amerigen-Haebler, Inc., New York, N.Y.

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HOOKER SULFUR CHLORIDES

SULFUR DICHLORIDE

Formula: SCl_2
Molecular Weight: 103.0
Appearance: Brownish red liquid with pungent odor

TYPICAL PROPERTIES

Pour Point	below —78°C
Boiling Point:	decomposes above 40°C
Cl_2 Content	66%
Sp. Gr., 15.5°/15.5°C	1.638
Flash and Fire Point	none

USES

As a chlorinating agent where use of elemental chlorine is not feasible; in chloridizing certain metallic ores; reagent in preparation of organic anhydrides, drying oils and rubber substitutes; reagent for drying coatings of ink, paint or varnish.

SULFUR MONOCHLORIDE

Formula: S_2Cl_2
Molecular Weight: 135.0
Appearance: Yellow to reddish heavy liquid with pungent odor

TYPICAL PROPERTIES

Pour Point	below —80°C
Boiling Point	138°C
Cl_2 Content	52.5%
Sp. Gr., 15.5°/15.5°C	1.6885
Flash and Fire Point	none

USES

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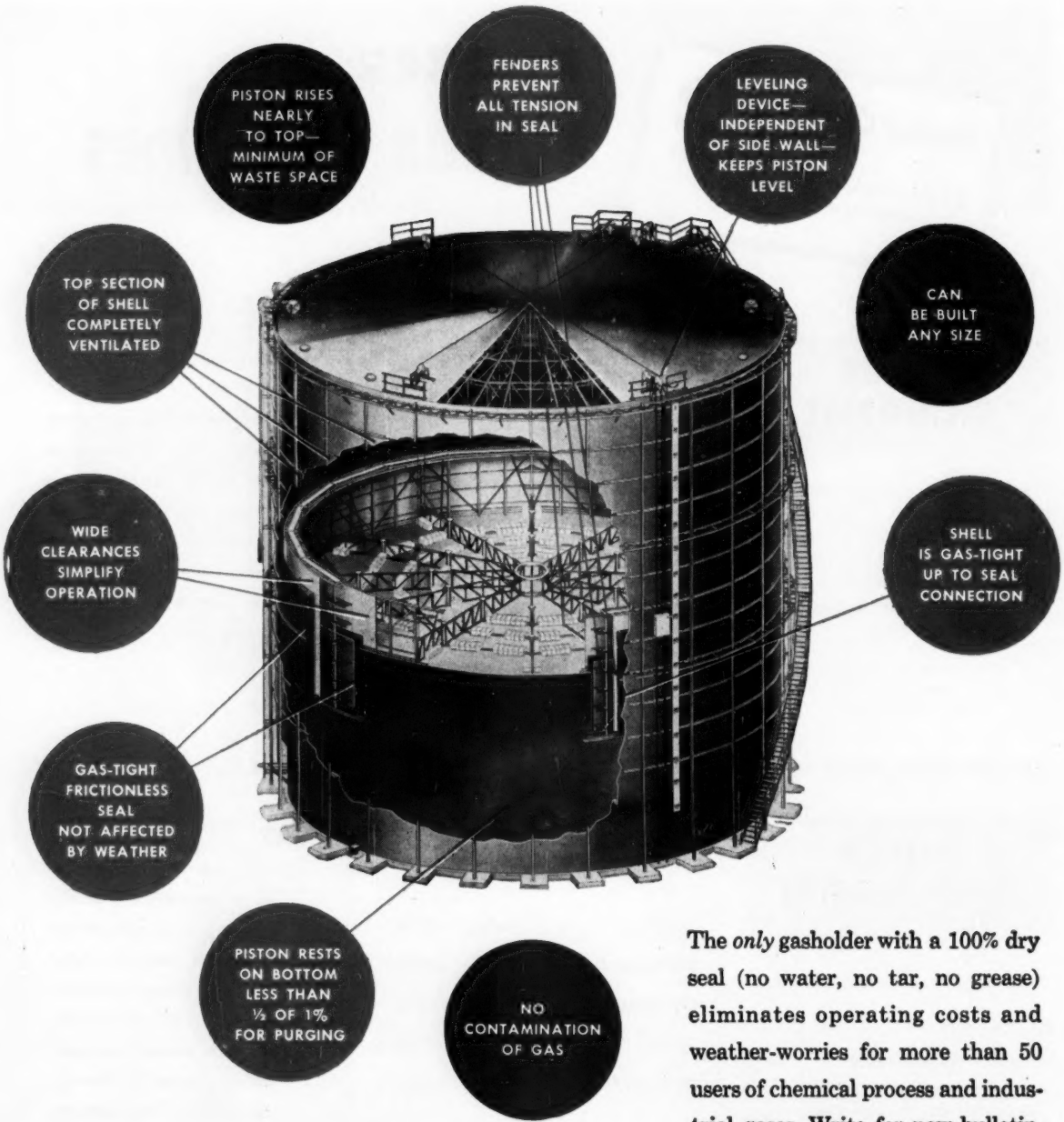
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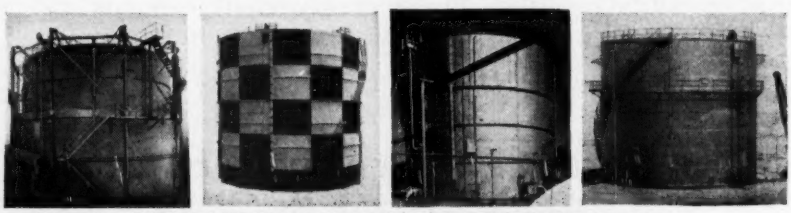

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RESEARCH . . . .

Opportunity for Rosin

This week, or next, the first experimental commercial production run of rosin-extended, cold GR-S will take place at Baton Rouge, La., synthetic rubber plant.

The new synthetic boasts 25% to 50% better abrasion resistance than ordinary cold GR-S, is being tested for tire use; most of the rubber industry now has a hand in the development.

But don't expect rosin-extended synthetic rubber to be commercially available in the near future; process and product evaluation is nowhere near complete.

U.S. RUBBER'S HOWLAND: In rosin, more than academic interest.

The eyes of the synthetic rubber industry are upon the bayou country; and all because of an experiment, slated for this week or next, bearing a confidential number in the research and development files of Reconstruction Finance Corp.'s Synthetic Rubber Board. It's not as mysterious as it sounds: the code number is the Board's designation for the first experimental production run of the recently unveiled high-rosin cold synthetic rubber. Scene of the trial will be Baton Rouge, La., synthetic rubber plant, operated for RFC by Copolymer Corp.

Regardless of how the trial comes out, high-rosin (or rosin-extended) rubber seems destined to be some part of the World War II-born industry for some time to come. For the simple truth is that rosin-extended cold rubber is still a long way from commercial reality. It's still strictly in the experimental stage of development, is in need of a lot more product and process evaluation.

PROVOST: In the pilot plant, no compatibility or equipment problems.

REYNOLDS: In large amounts of soap, a superior synthetic.

And the rosin-extended synthetic's double-pronged commercial potential guarantees no dearth of willing experimenters: The new rubber has proved 25% to 50% better than standard cold rubber in laboratory abrasion-resistance tests, could make a longer-wearing tire tread; and it represents a possible rosin demand pegged at a high of 200 million pounds a year—an optimistic, but not inconceivable figure.

To make this estimate a reality, the equivalent of today's entire cold GR-S output would have to be rosin extended. This seemingly starry-eyed picture, however, takes on a more sober aspect in the light of long-term growth of the synthetic rubber market.

Rosin, itself, is hardly a newcomer to the rubber industry. Ordinary rosin is well established as a plasticizer in normal types of natural and synthetic rubber. Refined and disproportionated rosins are familiar emulsifiers in the polymerization of GR-S monomers. In both cases, however, the amount of rosin that winds up in the finished rubber is small.

A Question: High-rosin cold synthetic rubber, surprisingly, is more an outgrowth of the role of petroleum oils in synthetic rubber development than that of rosin. About two years ago, the use of petroleum oils as extenders for high-molecular weight GR-S was initiated on a commercial scale. To researchers of naval stores-producing Hercules Powder Co. an interesting question was: Could rosin do as well, or better?

The answer also had more than academic interest for Louis Howland, manager of U.S. Rubber Co.'s synthetic rubber research, and his Naugatuck Chemical Div. researchers. Headed by James Reynolds, the Naugatuck staff had been investigating the prospect of producing a superior synthetic rubber by polymerizing GR-S in large amounts of soap. Such a polymer, made in the presence of generous quantities of rosin soap, looked promising, focused attention on the possibility of producing a rosin-extended synthetic rubber.

What "rosin-extended" means is pointed up by comparing the rosin contents of ordinary cold GR-S and the new U.S. Rubber-pioneered material: Cold GR-S contains in the neigh-

ARQUADS® 12 AND 18 PROVE VALUABLE AS DESTATICIZING AGENTS

Recently one of the largest chemical companies conducted a series of tests on Arquads 12 and 18 as destaticizing agents for polystyrene and Saran plastics. It is their opinion that these Armour chemicals are two of the most effective destaticizing agents that they have tested.

Arquads are a series of quaternary ammonium salts of fatty acids which exhibit high surface activity. These two chemicals are alkyl trimethyl ammonium chlorides, cationic in nature and compatible with cationic and nonionic materials. Both are soluble in water and alcohol, and a 1% solution of each in a 50-50 mixture of isopropyl alcohol and distilled water was used in these tests.

The tests were conducted by coating polystyrene wall tile with the solutions. The treated sections were rubbed for one-half minute periods with dry cleaning tissue, and examined for static charge. Arquad 12 and Arquad 18 both required more than 50 rubbings before the tile showed a charge.

Other tests, conducted with treated tile held at 130° F. for one week, indicated the effectiveness of Arquad 18 as an antistatic agent for polystyrene at elevated temperatures.

Similar tests showed that these Arquads worked as effectively on Saran as on polystyrene, both at normal room and at elevated temperatures. Smooth polished surfaces required a light polishing to avoid a slight spotting, but it was felt that on irregular surfaces this would not be necessary.

Samples of both Arquads are available for your own testing and evaluation. Send the coupon today for these samples and for further information on the use of these chemicals as destaticizing agents.

ARMACS® AS EMULSIFIERS FOR WAX FORMULATIONS

In wax emulsion formulations, stability is one of the most important requirements. Specific formulations for various uses have other requirements, such as excellent spreading characteristics, resistance to water spotting, etc.

Recent tests have shown that a number of Armacs—acetate salts of primary fatty acid amines—have outstanding qualifications for this field. These Armacs are cationic emulsifiers which plate out the wax phase of the emulsion onto the surface to be covered.

Armac T and Ethomeen S/25 should prove valuable as a carnauba wax emulsifier, since this combination adds waxy properties to the formulation. This should permit a reduction in the amount of carnauba wax used. Additional advantages of the formulation are increased emulsion stability and lower cost for the finished product.

These emulsifiers should prove particularly valuable for furniture polish, paste wax or shoe polish formulations. To begin your own testing and evaluation of Armacs as wax emulsifiers, check and send the coupon today for free samples of these versatile emulsifiers.

ARMIDS® ADD ANTI-OFFSET PROTECTION TO FUSIBLE DECORATIVE COATINGS

Already used as an anti-offset agent for printing inks, the Armids have recently proved valuable in providing this protection for fusible decorative coatings on ceramics and glassware.

These decorations are applied by running a tumbler, ash tray or other glass object under a heated wire screen printer. After coating, conveyors carry the printed ware to ovens where the decoration is permanently fused to the glass. The coating consists basically of a mixture of pigments, fine sand, and binder.

Normally, care must be taken in handling the glassware before the fusing has taken place. However, the addition of a small amount of Armid to the mixture permits transporting freshly coated glassware to the ovens without danger of transferring or smearing the decoration on the conveyor line.

At the oven the Armid, rosin and solvent volatilize, leaving the fine sand and pigments to fuse and form a permanent bond to the glass or ceramic surface. Additional advantages include anti-offset qualities, lower coating viscosity, greater adhesion and low volatility.

A sample of the Armids will show you how these chemicals work in this process. Armids are also useful as anti-block agents, anti-scratch agents, mutual solvents for many synthetic resins and paraffin or microcrystallin waxes, and as dye solubilizers, among other applications. For free samples, check and mail the coupon today.

NON-YELLOWING VINYL CHLORIDE POLYMER STABILIZERS WITH ARMOUR'S NEO-FAT 10 OR NEO-FAT 12

There is an ever-increasing demand for vinyl chloride polymer type products which have improved resistance to the yellowing caused by the action of heat and/or light.

It has been the practice in the past to use as a stabilizer stearic acid or low purity mixed coco fatty acids containing varying amounts of stearic, oleic and linoleic fatty acids. Soaps of these acids are not completely compatible and result in "blooming" or cloudy films. The presence of unsaturated acids contributes to undesirable yellowing and in pigmented films produces off-shade colors.

Neo-Fat 10 (capric) and Neo-Fat 12 (lauric) soaps have shown outstanding merit in this application. They are compatible, and do not contribute to cloudiness, bloom or yellowing in the vinyl films. The main reason for this is the almost complete absence of stearic, palmitic and unsaturated acids. In Neo-Fat 10 the capric content is 92%, and the lauric content of the Neo-Fat 12 is 95%. In addition, the high acid value, low moisture, and low unsaponifiable content of these acids insure a maximum of metal per pound of stabilizer. Stabilizers based on these acids are extremely resistant to water leaching when used in vinyl films. Send the coupon for samples of these materials with which to begin your testing and evaluation.

COMMERCIALLY PURE MYRISTIC ACID OFFERS MANY PRODUCT DEVELOPMENT POSSIBILITIES

The Armour Chemical Division's patented fractional distillation process has provided many new materials which have led to the development of new and improved products. An outstanding example is Neo-Fat 14—a commercially pure myristic acid.

Myristic acid occurs naturally as the glyceride in various vegetable oils and fats. It is a hard crystalline substance falling between lauric acid and palmitic acid in the saturated fatty acid series. Commercially it is available as Neo-Fat 14 with over 94% pure myristic acid content and only traces of lauric and palmitic acid.

SPECIFICATIONS	MIN.	MAX.
Iodine No.	—	1.0
Acid value	243	249
Titer, °C	48	52
Color, Lov. 5¼"	—	1.0R-10Y
Unsaponifiable	—	0.2%
Moisture	—	0.2%
Odor		Characteristic
Appearance		Characteristic

COMPOSITION

Myristic Acid	94.0%
Lauric Acid	3.0%
Palmitic Acid	3.0%

SOLUBILITY AND COMPATIBILITY

At 60°C, Neo-Fat 14 is soluble in acetone, amyl acetate, benzol, butanol, carbon tetrachloride, dipentene, ethanol 90% and 100%, kerosene, methyl cellosolve, turpentine, V. M. & P. naphtha and xylol.

It is compatible at 60°C with alkyd resins, asphalt, beeswax, carnauba wax, linseed oil, paraffin wax, petroleum pale oil and soybean oil.

USES

The availability of Armour's high purity myristic acid provides a new raw material for the synthesis of organic compounds. Alcohols, nitriles, amine esters and metallic soaps may be produced easily and find innumerable applications. Many references have been made in recent literature to the use of various Neo-Fat 14 derivatives in detergents, dyes, textiles, wetting agents, lubrication oils and greases and other industrial applications.

The monoglyceryl ester of myristic acid is a substitute for coco butter in suppositories and as a super fatting agent for soaps, creams, lotions and similar products. It may also be used in the preparation of agricultural parasiticides.

Neo-Fat 14 or its metallic soaps have been used in rubber compounding, synthetic resins, paints and grease.

The sodium or potassium soaps of Neo-Fat 14 have remarkable sudsing and wetting action without the skin irritating tendencies found in most free-lathering soaps. This suggests its suitability for cosmetics, shampoos, shaving creams, etc.

Neo-Fat 14 is available for immediate shipment in flake form in both 50-pound multi-wall bags and in aluminum tank cars. Send today for samples.

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Armour's Neo-Fat coco acids are now available in concentrations of above 92%. This is a degree of purity never before available, and, to mark the change, Armour has re-labeled the Neo-Fats. In the specification chart below, the old number, in parenthesis, follows the new. At the same time that purity standards have been raised, the iodine value has been lowered and the color has been lightened.

Ordinary distilled coconut oil fatty acids are mixtures of nine different fatty acids in percentages varying from 0.5% to 48%. Each of the nine component acids has its own specific chemical and physical properties which make it valuable for certain uses but unsatisfactory for others. Today, however, you are no longer forced to buy a mixture of nine different fatty acids to get the one you really want.

A new specification chart has just been prepared which includes all pertinent information on these versatile chemicals. Check the coupon for your free copy of this chart. In addition, get the Neo-Fat booklet for end-use information. This new booklet contains much valuable data on the Neo-Fat fatty acids and their use.

	Iodine		Acid Value		Titer, C.		Color, Lovibond 5¼"	Caproic	Caprylic	Capric	Lauric	Myristic	Palmitic
	Min.	Max.	Min.	Max.	Min.	Max.		%	%	%	%	%	%
Neo-Fat 8 (7) (caprylic acid)	—	1.0	387	392	—	16°	2 R-20 Y	3	93	4			
Neo-Fat 10 (9) (capric acid)	—	1.0	323	329	28°	33°	2 R-20 Y		3	92	5		
Neo-Fat 12 (11) (lauric acid)	—	1.0	278	282	41°	44°	1.0 R-10 Y			1	95	4	
Neo-Fat 14 (13) (myristic acid)	—	1.0	243	249	48°	52°	1.0 R-10 Y				3	94	3

Mail this coupon

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Send Literature: ☐ Neo-Fat spec. chart ☐ "Fractionated Coco Oil Fatty Acids"

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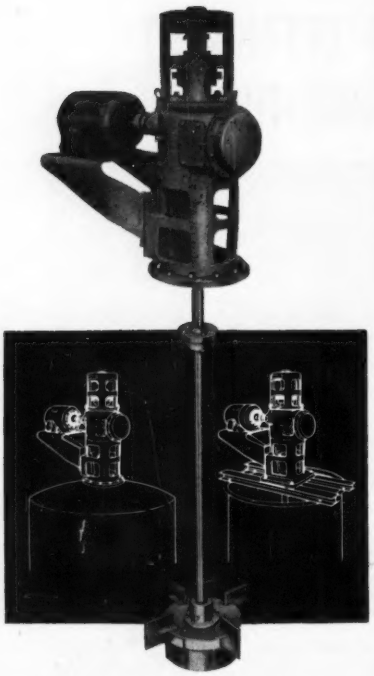

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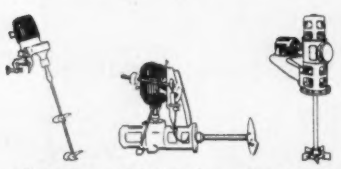

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borhood of 5 to 7 parts of rosin (picked up from the rosin soap emulsifier) to 100 parts* of synthetic rubber polymer; rosin-extended GR-S may have anywhere from 15 to 100 parts of rosin added to 100 parts rubber. Development efforts, however, have been centered on a 25:100 rosin-GR-S recipe.

No Equipment Problem: Production of high-rosin GR-S does not entail any major revamping of synthetic rubber technology. By means of a process, pilot-planted under the direction of Naugatuck's Raoul Provost, the rubber is made, briefly, like this: Before coagulation, the rubber latex is mixed with water-solutions of rosin soap. Latex is then coagulated by ordinary addition of salt and acid, forms small crumbs of rubber which are washed and dried. The entire operation, says U.S. Rubber, is carried out in standard equipment. And the rosin introduces no compatibility problem since it's already a part of the latex emulsifier.

If desired, carbon black or other compounding materials may be safely added to the latex before coagulation. As a matter of fact, Phillips Petroleum Co. has already made a batch of the rosin-extended GR-S with carbon black at Borger, Tex.

Just exactly how rosin exerts its beneficial influence on the synthetic rubber polymer is still largely a matter of conjecture. Like petroleum oils, rosin plasticizes and lubricates the long polymer chains of the tough, high molecular weight GR-S. Net effect is a softer, more manageable material. But rosin does more; it increases tensile strength and wear resistance of the rubber. The puzzle is, how?

Finding the answer, doubtless will be an order of business with researchers of a score of synthetic rubber-producing firms which have an active interest in the rosin-rubber development. But, for Naugatuck researchers —at any rate—a probe of ways to utilize the new synthetic and the search for the best rosin ingredients are more pressing items.

Right now, two different rosin-extended synthetics have reached the large scale evaluation stage: a product containing disproportionated (dehydrogenated) rosin; and one containing crude wood rosin. Both rosins are readily available on a commercial scale. In fact Hercules Powder Co.'s Dresinate 731 disproportionated rosin has been found to be more than satisfactory as an ingredient of the high-rosin synthetic. Aside from the chosen pair, hydrogenated rosins and esterified rosins have been eyed and found wanting.

From a cost standpoint, rosin-extended cold GR-S is betwixt and between. Since the rosin extender is less costly than the raw synthetic rubber, the extended synthetic, obviously, will be less costly—pound for pound—than ordinary cold GR-S. But the very same holds true for oil-extended GR-S; and the petroleum oils used as extenders are a lot cheaper than the rosins.

Extender oils currently cost about 2½¢ a pound; rosin ranges from about 7½¢ (for the ordinary) to 15¢ a pound (for the disproportionated). What it means, then, is this: The difference must be made up in quality. In order to successfully carve a market, in the face of competition from oil-extended GR-S, high-rosin synthetic must offer definite end-use advantages.

Hercules Powder Co., whose papermakers chemical division researchers spearheaded the technical attack on rosin-extended GR-S from the naval stores angle, is taking steps to get the synthetic off on the right foot. The company, which is well represented in chemicals for the synthetic rubber industry, has set up a new office in Akron, Ohio, to render technical assistance to rubber manufacturers in the making of test lots of tires.

If rosin-extended rubber does not make the commercial grade, it won't be the fault of any lack of industrial interest. Aside from U.S. Rubber Co., which pioneered the original research, just about every other major rubber company is now in on the development.

* Making a total of 107 parts—a method of specification used in the rubber industry.

Petroleum Pay-Off

Since 1946, the year Pennsylvania Industrial Chemical Corp. absorbed the chemical department of United Gas Improvement Co. (Philadelphia), Picco researchers have pressed a full-dress probe of resin-forming materials derived from the cracking of crude oils. Latest product of their efforts is Piccopale, a new, low-cost hydrocarbon resin.

Structure of the new product is not entirely clear; it's largely aliphatic in nature, has an average molecular weight of about 1,100.

There's no question, however, about Piccopale's chemical progenitors: It's produced by the copolymerization of conjugated dienes and active olefins. Unlike some petroleum-derived hydrocarbon polymers, the resin has none of the aromatic structure associated with coal tar resins. Iodine value is on the high side, but

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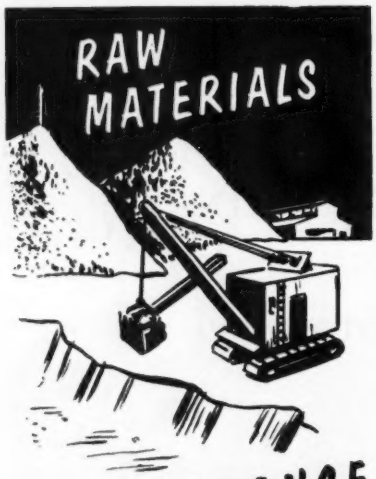

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this probably is more a sign of reactive hydrogen in the molecule than unsaturation; the resin's color stability and aging properties point to not more than one double bond.

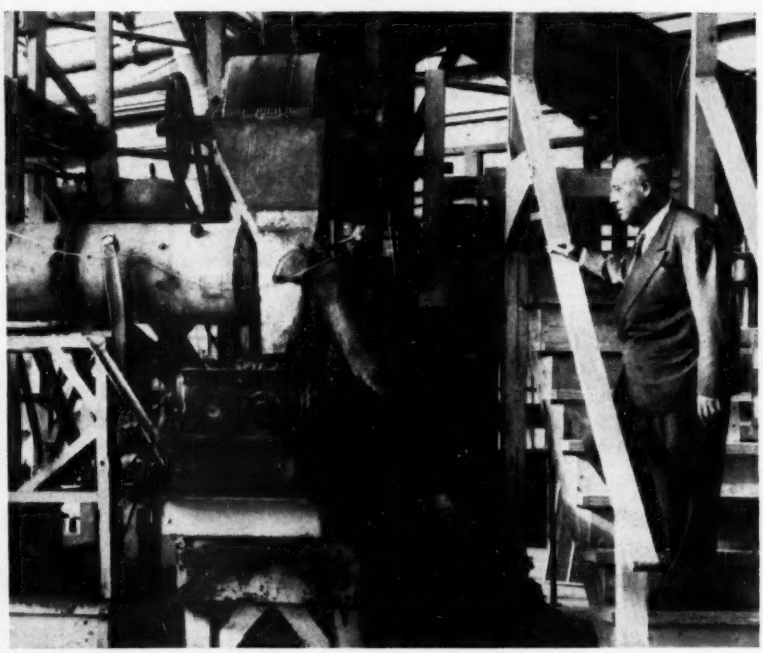
In Picco's mind, the resin can handle jobs which, in many cases, are not handled by currently available hydrocarbon resins. Polyethylene modifier is a case in point; the resin improves the moisture transmission and minimizes cracking of polyethylene. And it's miscible with polyethylene in all proportions, eases extrusion and processing of the plastic. Polyvinyl chloride also offers application possibilities for the hydrocarbon resin, but compatibility, in this case, is rather limited.

According to Picco, one of Piccopale's most promising potential uses is as a binder ingredient in low-cost, emulsion-type paints. Such paints are said to show good resistance to water and alkali, stand a good deal of brushing. All in all, Picco ventures, "flow properties and film appearance are fully comparable with the best of latex paints now on the market," except for one thing—the slight color of the resin.

Light and Dark: Piccopale is far from dark; it's pegged at less than 13 on the Gardner color scale, below 3 on the coal tar scale. Yet it is darker than Pan American Chemicals' competing Panarez 6-210 hydrocarbon resin (Gardner color, 11) which it resembles in other ways. Examples: softening point—Piccopale, 207 F to 217 F, Panarez, 200 F to 220 F; acid number—Piccopale, less than 1, Panarez, less than 1; iodine number—Piccopale, 120, Panarez, 170.

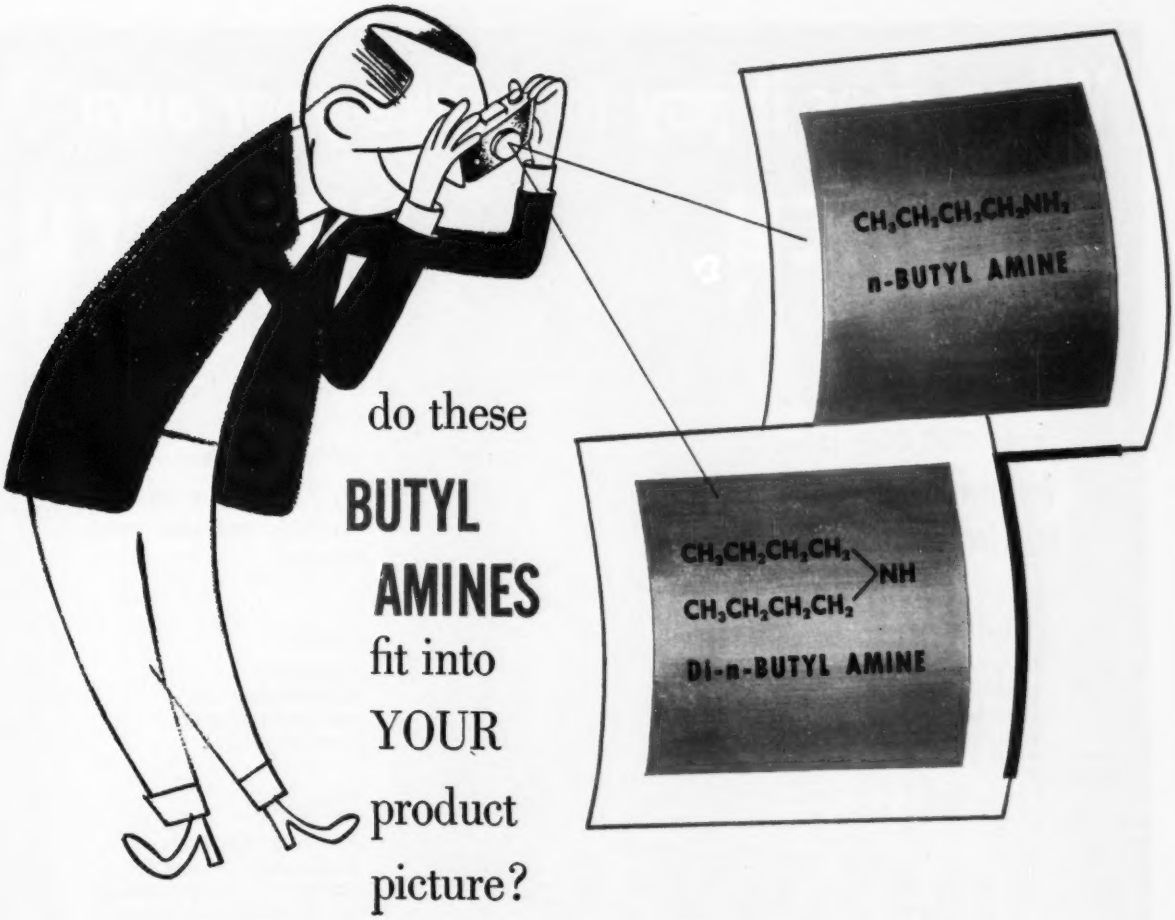
Priced at 12¢ a pound (carload), it is one of the least costly pale hydrocarbon resins on the market. Cost at any rate, won't bar it from a raft of uses still under investigation. Two of these: in adhesives; in inks, plasticized or with drying oils.

Right now, Piccopale is available in three solid forms (softening points, approx. 100 C, 85 C and 70 C) and in 60% solution in mineral spirits. But aqueous emulsions of the resin and master batches in elastomers may be brought along for special applications.



Acid Test: Nitric for Sulfuric

CHARLES YOUNG, manager of chemical engineering for Tennessee Valley Authority at Muscle Shoals, Ala., inspects drying and mixing section of pilot plant which is providing the data for the design of a production-scale plant to make nitrophosphate fertilizers. The larger plant—in turn—will be used, in TVA's words, ". . . to provide additional technical information necessary to encourage small producers unable to afford extensive pilot-plant research." Nitrophosphates are made by subsituting nitric for part or all of the sulfuric acid normally used to make fertilizer.



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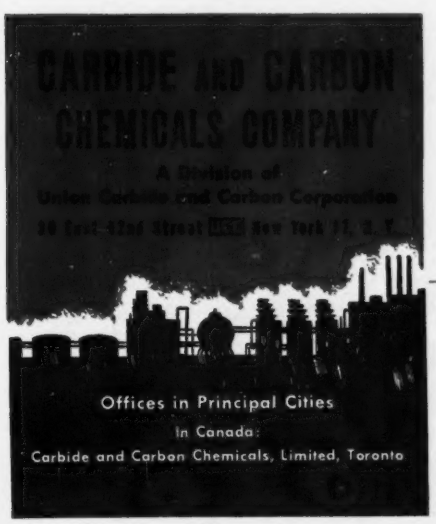
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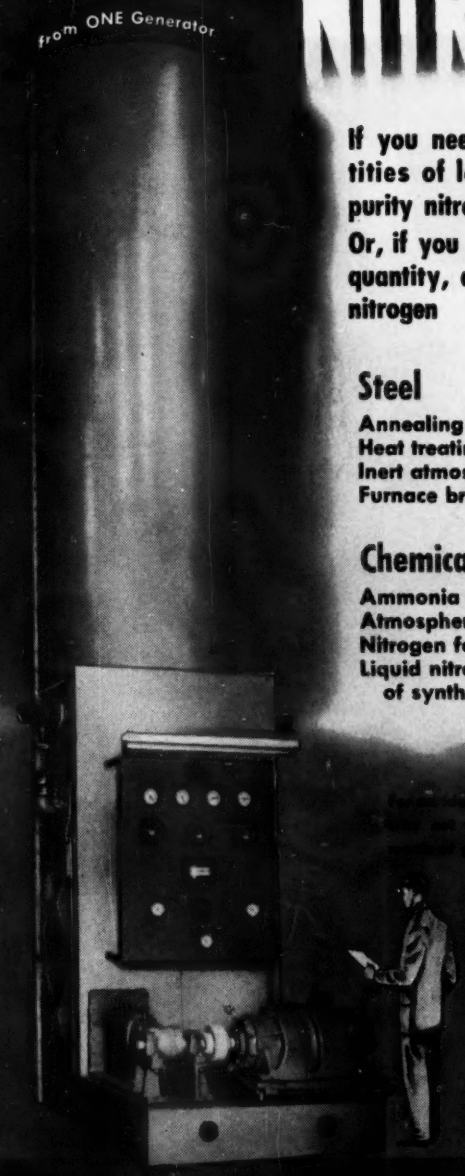

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If you need large quantities of low-cost, high-purity nitrogen—
Or, if you use oxygen in quantity, and also need nitrogen

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Heat treating
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Chemical
Ammonia synthesis
Atmosphere control
Nitrogen for drug making
Liquid nitrogen scrubbing of synthesis gas

Whatever your requirements, check with us! We'll be glad to talk over your needs . . . help you decide if "making your own" would be advantageous.

Possibly one of our 14 standard *High-Purity* Oxygen-Nitrogen Generator models would satisfy your requirements. Or, perhaps your interests would indicate an Air Products *Tonnage* Oxygen-Nitrogen plant — available in 9 standard models, or built to meet particular needs.

For full data on what we can do for you, or help you solve your requirements or problems, We'll send back our NEW CATALOG, plus our review of what we've done and made this year.

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Specialists in Equipment for All Low-Temperature Processes

Air Products INCORPORATED High-Purity and Tonnage

OXYGEN-NITROGEN GENERATORS

RESEARCH . . . . . .

Cost Cutter: New dye formulations can slash the cost of dyeing Dynel by as much as 59%. That's the word from the textile fibers department of Carbide and Carbon Chemicals Co. (Div. of Union Carbide and Carbon Corp.). Marked savings are not the result of the development of new dyes especially for the synthetic fiber; rather, they're an outgrowth of reformulation in acetate and acetate-acid color dyeings. Carbide says that coloring improvements ". . . are the results of a program devoted to the more effective utilization of the newer dyestuffs and methods of application."

The cost-cutting peak of 59% was obtained with a green shade; savings with other colors ranged upwards from 30%. Properly handled, the new dye formulations give high-grade results. But one word of caution: In some cases, dyes used in the new formulations require close control in dissolving operations.

•

Permanent Home: Celanese Corp. of America's petrochemical research activities are now getting settled in the company's new Clarkwood, Tex., research laboratories. The first permanent home for the research and development department of Celanese's chemical division, the new facilities take over from temporary laboratory buildings built during World War II.

•

Intestinal Infiltration: Hailed by Organon, Inc. (Orange, N.J.), as the first effective oral preparation for the treatment of pernicious anemia, Bifacton—a pill containing vitamin B_{12} and a material known as "Castle's intrinsic factor"—is slated for commercial introduction by the New Jersey firm this month. "Castle's intrinsic factor," a carrier for B_{12}, apparently is the key to the new material's effectiveness. The "factor" promotes the infiltration of the vitamin through the intestinal wall into the blood stream, is lacking in pernicious anemics. Organon gets the factor from swine stomachs, thinks it could obviate some 190,000 Americans' need for periodic liver extract injections.

•

Dust Patents: Two patents (U.S. 2,553,773 and 2,553,774), covering fungicidal dusts which contain N-(trichloromethylthio) - *o* - sulfobenzimide and N-trichloromethyl morpholine admixed with clays, were recently assigned to Standard Oil Development.

•

School Bell: Applications for the 1953-54 session of Oak Ridge School of Reactor Technology will be taken up to March 1.

Now available

in substantial quantities for the manufacture of odorless protective coatings . . .

AMSCO Odorless MINERAL SPIRITS

manufactured under rigid control to meet exacting specifications

AMERICAN MINERAL SPIRITS COMPANY

Service in 48 States

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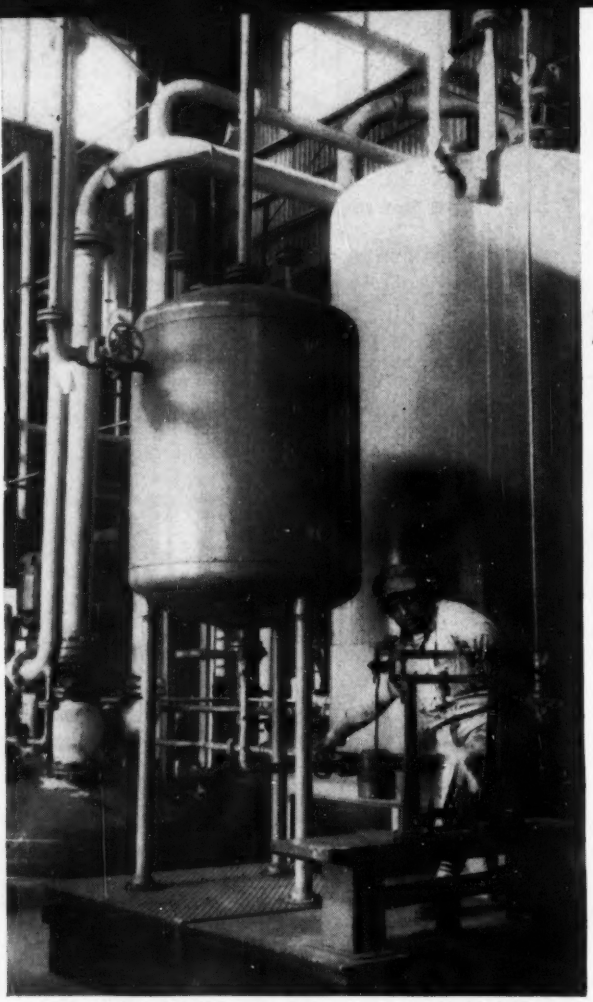
155 East 44th Street, New York 17, New York
8600 South Garfield Avenue, South Gate, Los Angeles, California

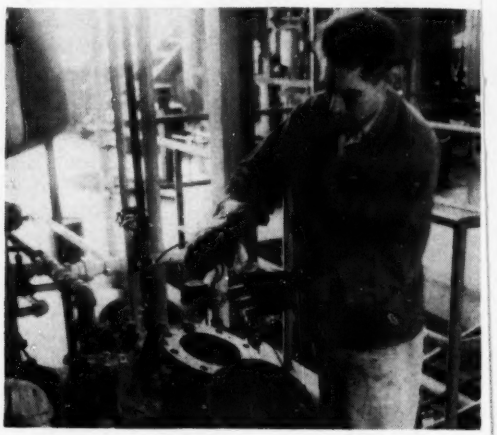
Complete technical data, prices and samples available on request

PRODUCTION

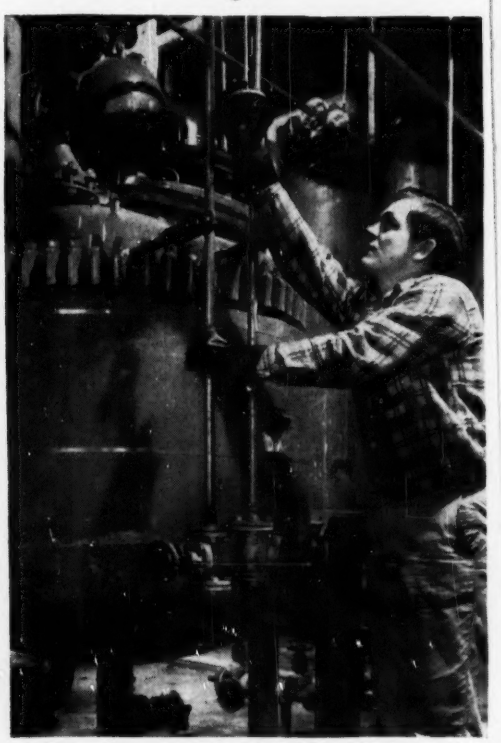
The product is saponified, treated with acid to form allyl acetone. That's condensed with pyruvic aldehyde, dehydrated to allethrolone...



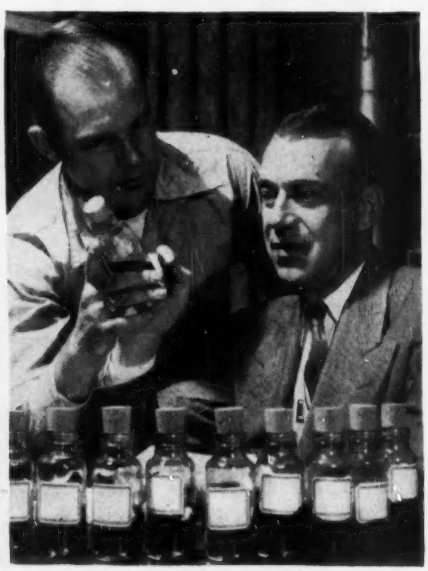
ALLETHROLONE PREPARATION starts with allyl chloride and acetoacetic ester. Here, the shift foreman weighs in chloride.



. . . WHERE OPERATOR measures pH. During last stages, pH is checked every 10 minutes.



IN AN ESTER INTERCHANGE, the ester and allethrolone unite, form commercial allethrin.



PRODUCTION AND RESEARCH work as a team. W. S. Blondheim, H. A. Jones, A. W. Taff and D. L. Stockbridge schedule, examine samples.

OPERATOR CHARGES glycine which is esterified, reacted with nitrous acid to form the diazatized glycine ester.

DIAZO REACTION is carried out by remote control behind concrete barrier. This is kettle's eye view of operator.

ACTEYLENE AND ACETONE team up to form dimethyl hexynediol which is converted to the hexanediol (above), then to the diene. That, with the diazo, forms the chrysanthemic ester.

Leading Up to Allethrin

Benzol Products (Newark, N.J.) which last week was undisputed kingpin in allethrin production, this week has a competitor, for U.S. Industrial Chemicals is bringing in its new Baltimore allethrin plant. Actually, the U.S.I. plant has been in limited production for several weeks. But making allethrin is a tricky process, attaining rated capacity a gradual operation.

Until all the process wrinkles are ironed out, in fact, production and research are operating the plant as a team. Heading up the research half is Harold Jones, manager of the Baltimore Research Laboratories. His production counterpart is William Blondheim, manager of the Baltimore plants. Al Taff is the research technical director of the allethrin plant while Deery Stockbridge is the supervisor of allethrin production.

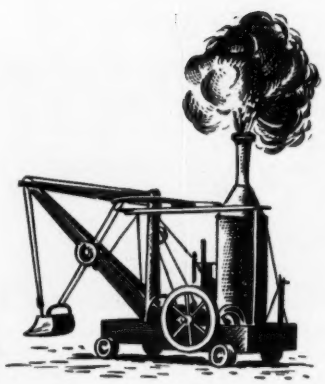
In its application for a certificate of necessity on the plant, U.S.I. pegged its capacity at a "little more" than 36,500 lbs. That's undoubtedly conservative, however, and with the extra shifts, the plant can probably turn out close to 75,000 lbs. a year. Even so, that will put U.S.I. capacity comfortably below Benzol's 100,000 lbs. a year. Both, of course, will pale by comparison with Carbide and Carbon's 400-500,000 lb. a year plant at Institute, W.Va. which is scheduled to go on stream early next year.

Touring the U.S.I. plant last week the CW camera found the U.S.I. process—like Benzol's (*CW, July 5, '51*)—is an outgrowth of the work of the U.S.D.A.'s La Forge, Schecter and Green, who developed the synthesis. Both firms are licensed under the patent granted to Schecter and La Forge (U.S.P. 2,574,500), although each has had to modify the laboratory process to make it suitable for commercial production.

Commercial allethrin is a mixture of isomers of allethrolones (D- and L-) and chrysanthemic acids (cis and trans).

Since neither chemical is commercially available, the process calls for two convergent flows of material, one leading to the allethrolones, the other to the chrysanthemic esters. Similarly, the preparation of chrysanthemic ester requires convergent flows, from the diazatized glycine ester and from dimethylhexadiene. There are 12 to 20 steps depending on the availability of intermediates.

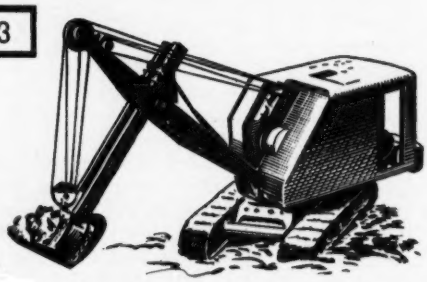
- **SODIUM BICHROMATE**
- **SODIUM CHROMATE**
- **POTASSIUM BICHROMATE**
- **SODIUM SULPHATE**



1909

over 40 years of progress in chemicals

1953



Natural — BICHROMATES — CHROMIUM PRODUCTS

NATURAL PRODUCTS REFINING CO. • JERSEY CITY 5, N. J.

NP 118

EQUIPMENT. . . .

Sure Sniffer: The Mine Safety Appliances Co. (Pittsburgh) claims its new MSA aromatic hydrocarbon detector accurately measures atmospheric concentration of benzene, xylene and toluene. Also declares the device can't be fooled by a masking type of paint deodorant.

•

Pre-Set Pipet: Newly available from the Central Scientific Co. (Chicago) is the Maisch automatic pipeting system.

•

Hot Air: Improved industrial heaters are now available from Westinghouse Electric Corp. (Pittsburgh). Ranging from 100,000 to 2½ million btu per hour in heating capacity and from 2,000 to 25,000 cfm in air velocity, these self-contained units may be floor-, wall-, or ceiling-mounted.

•

Cold Air: Coming soon is General Electric's (Schenectady) XR-10, a new "thermal barrier." Claimed to be more efficient than any insulation now in use, it has walls only ½-inch thick. Potential applications lie in fields where limited insulation space is a prime factor.

•

Lights: Light Warden, a new emergency power system, is now being marketed by Electric Cord Co. (New York). Consisting of automatically charged nickel-cadmium batteries, it will be available in varying voltage and amperage for the emergency operation of lights, fire alarms and public address systems.

•

Camera: Film fogging in high-speed cameras caused by cathode glow passing through an unmetalized screen is reportedly eliminated by a Type 5XP-AM metalized cathode-ray tube now available from Du Mont Laboratories, Inc. (Clifton, N.J.). Incorporation of this tube in the Type 303-AH oscillograph also results in improved performance.

•

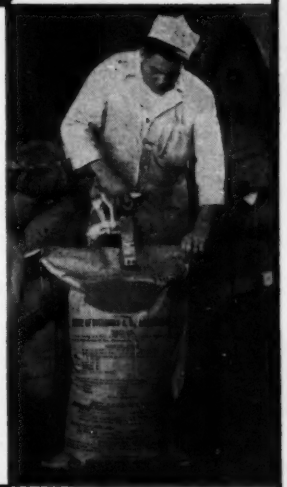
Action: Just introduced by the Metron Instrument Co. (Denver) is its Metron miniature variable speed changer with lever speed control. The lever control provides for fast changes of speed over a 25 to 1 range. Suggested applications are in fields requiring either local speed settings or remote control with connecting mechanisms.

•

Bored: Now available in fractional sizes for holding thermocouples are the standard Swagelok tube fittings marketed by Cleveland's Crawford Fittings Co. Bored completely through at one diameter, these Swagelok con-

FISCHBEIN *Portable* **BAG CLOSER**

CARRY MACHINE TO BAGS!



- Entirely portable... weighs only 10½ pounds.
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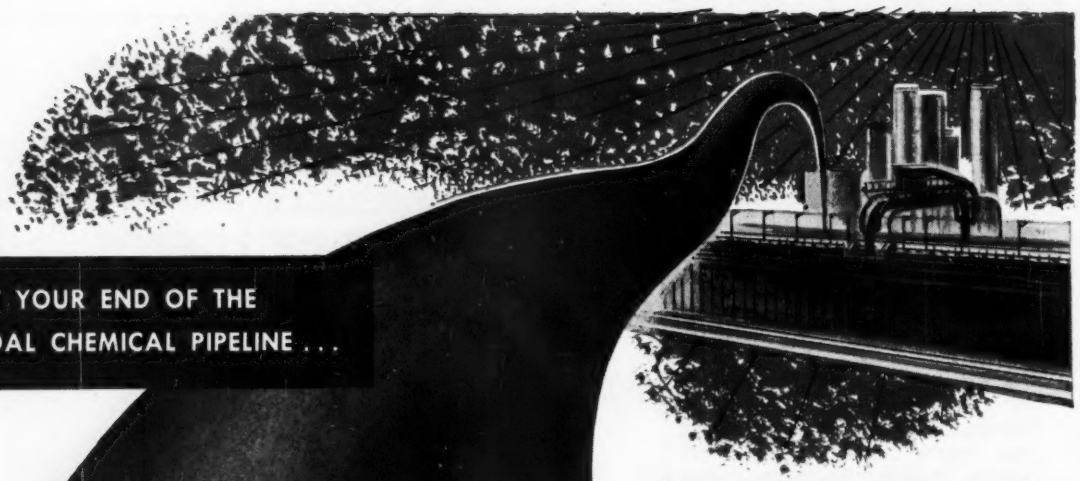

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HERE'S American scientific ingenuity at its best . . . a plastic ball that makes life-saving fresh water from the sun and the sea. The principle is simple: Solar heat evaporates sea water from a black "wick" and the distilled vapors condense on the cooler inner surface of the sphere.

But one of the real challenges was to produce a vinyl plastic that wouldn't succumb to salt water, heat and long storage. That was a job for a good *plasticizer*. As a basic producer we're continually being called upon for plasticizers to meet every demand, from low temperature flexibility in Arctic-bound military coverings to high stability in surgical tubing. Whatever the challenge, plastics manufacturers have learned to count on the uniform high quality of Pittsburgh PX Plasticizers . . . an advantage that accrues from our unique coal-to-finished plasticizer production control. This same *assurance of quality* carries right through the products of our other integrated divisions . . . because we're *basic*.

W&D 4414

DiButyl Phthalate
DilsoOctyl Phthalate — DiOctyl Phthalate
DiNonyl Phthalate — DiNonyl Adipate
DilsoOctyl Adipate — DiOctyl Adipate
DiButyl Sebacate — DilsoOctyl Sebacate
DiOctyl Sebacate — TriCresyl Phosphate
TetraHydroFurfuryl Oleate

PLASTICIZER DIVISION
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nectors are said to ease handling of thermocouples.

•

Switch: Supplied with single or dual float systems, the Revere float switch is suitable for industrial uses where fluid level control is important. It is manufactured by the Revere Corp. of America (Wallingford, Conn.).

•

New Models: Baldwin-Lima-Hamilton Corp. (Philadelphia) has recently revised the Baldwin 60-H and 12-H testing machines. Increased columnar space, single unit design, and choice of two types of indicators are the new features.

•

Mighty Mite: Any varying dimension which can be resolved into a shaft position analog can be represented in digital form by the Digitizer. Manufactured by Coleman Engineering Co. (Los Angeles), this new electro-mechanical converter measures 5" by 5" by 1⅛".

•

Stacked: Equipment Manufacturing, Inc. (Detroit), is now producing wire stacking boxes for material handling. For decreased weight and increased ventilation and drainage, the box has wire sides and bottom. Self-centering stacking caps on the corner posts permit lift truck tiering to save space.

•

Second Standard: The second of two standards for self-lubricating bearings has just been released by the Metal Powder Association (New York). Designated 16-52T, it is intended as an adjunct to 14-51T, released in 1951.

•

Streamlined: A new draft gage, Vertiscale, has been added to the Hays Corp. (Michigan City, Ind.) line of draft and low pressure instruments.

•

Improved: Successor to Model F is the new Model G microwave vacuum pump of the F. J. Stokes Machine Co. (Philadelphia). Good for: drying blood plasma, high vacuum evaporation of metals and metallic salts, evacuation of light bulbs, and the vacuum sealing of containers.

•

Cold Conveyor: Claimed to be the first fully automatic, continuous conveyor system for rapid freezing of packaged foods is the new Votator continuous freezer. Marketed by The Girdler Corp. (Louisville), the unit has 105 trays suspended between continuous conveyor chains. One hundred trays at a clip are subjected to blasts of cold air in a pre-set cycle operation with the holding time in the freezing unit varied from 40 to 120 minutes.

We doubt if you could use 25 kilos of . . .

2,4,6-TRICHLOROANILINE

But if you could, we should be happy to supply you. Whenever you have need of a "rare" organic in larger-than-laboratory amounts, just write to *Distillation Products Industries,* Eastman Organic Chemicals Department, Rochester 3, N. Y. (Division of Eastman Kodak Company). There are more than 3500 regularly supplied Eastman Organic Chemicals for science and industry.

Also . . . vitamins A and E
. . . distilled monoglycerides

DPi

TIME TO SWITCH...

Many fibre drum users have switched to Mente SealPak Laminated Bags. They have found that SealPak Bags cost less, but are equally satisfactory—pack and handle easier and faster—take less warehouse space—save on freight costs—and can be attractively printed.

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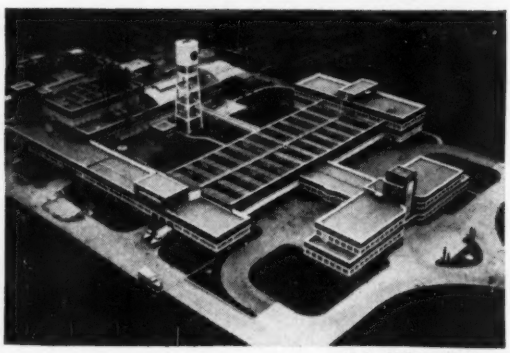
DISTRIBUTION . . . . . .

Argentina—Land of Potential Promise

Potentially the most prosperous of all the countries south of the border, Argentina is a study in contrasts. Theoretically it should be one of the U.S. chemical industry's best overseas customers, yet during 1951, the latest full year reported, it took only $43 millions' worth of American chemicals—barely 4% of the U.S.'s export total. But now, with the inauguration this month of President Juan Peron's second five-year plan, export-minded U.S. firms are taking a second look at that troubled land.



E. R. SQUIBB—ARGENTINA

THE FUTURE of American chemicals in Argentina may well depend on whether . . .

The immediate past certainly indicates that any change will be a change for the better. The year 1952 was one of depression for Argentina. Two years of drought had crippled the agricultural base of the economy. Governmental mismanagement and interference deepened the crisis. Chemical imports—chiefly from the U.S.—slipped to 50-60% of the 1951 levels. And American chemical companies with subsidiary plants in Argentina suffered from a maze of restrictions on the importation of necessary raw materials.

Tune Changers: But now the atmosphere appears to be changing. Peron—his fingers badly burned by the economic experiments of the first five-year plan—is attempting to put his financial house in order.

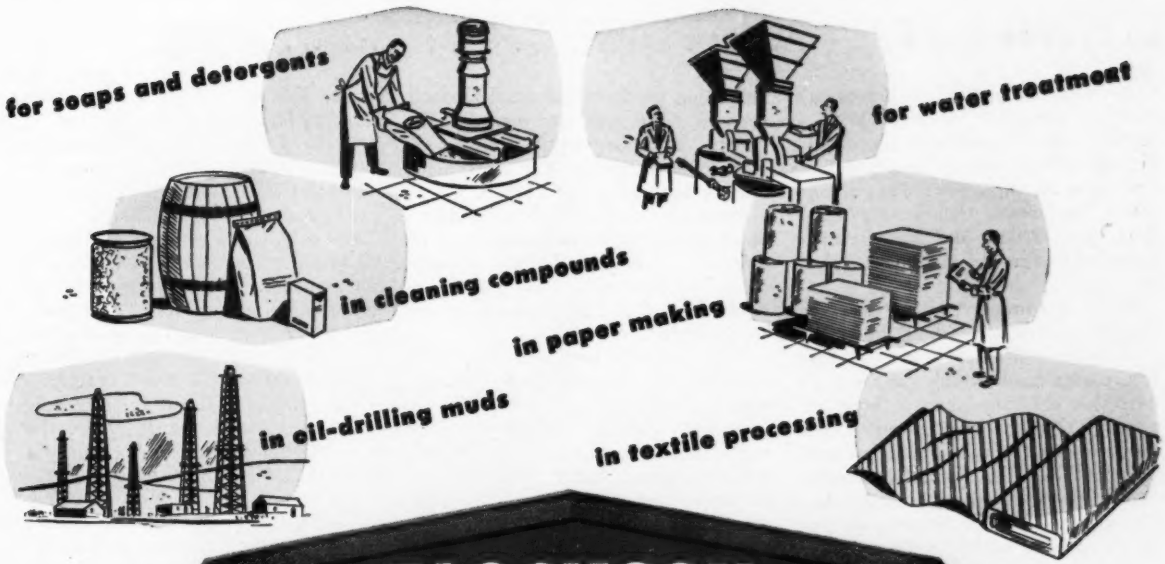
His new plan calls for a $2.4 billion expenditure on (1) industrial expansion; (2) help for the long-neglected farmers. Economists both inside and outside Argentina insist that the program will require foreign financing. But this would require basic changes in Peron's nationalistic, keep-out-the-imperialists political line.

WIDE WORLD

PERON's new program means a change of heart.

Some observers believe that these changes are imminent. They think they can spot "indications that the way is being paved for the large-scale reentry of United States capital, either private or governmental." For companies which have already invested heavily in Argentina's future (*e.g.*, E. R. Squibb (*see cut*) and Du Pont) this is good news indeed. They've been through precarious times.

Chemical Questions: Assuming that the atmosphere does change, what opportunities exist for future chemical importations into Argentina? And further, what is the outlook for chemical manufacturing operations – through subsidiary companies – should the present attitude toward foreign investments be mellowed? The answers to both of these questions lie, in part, in



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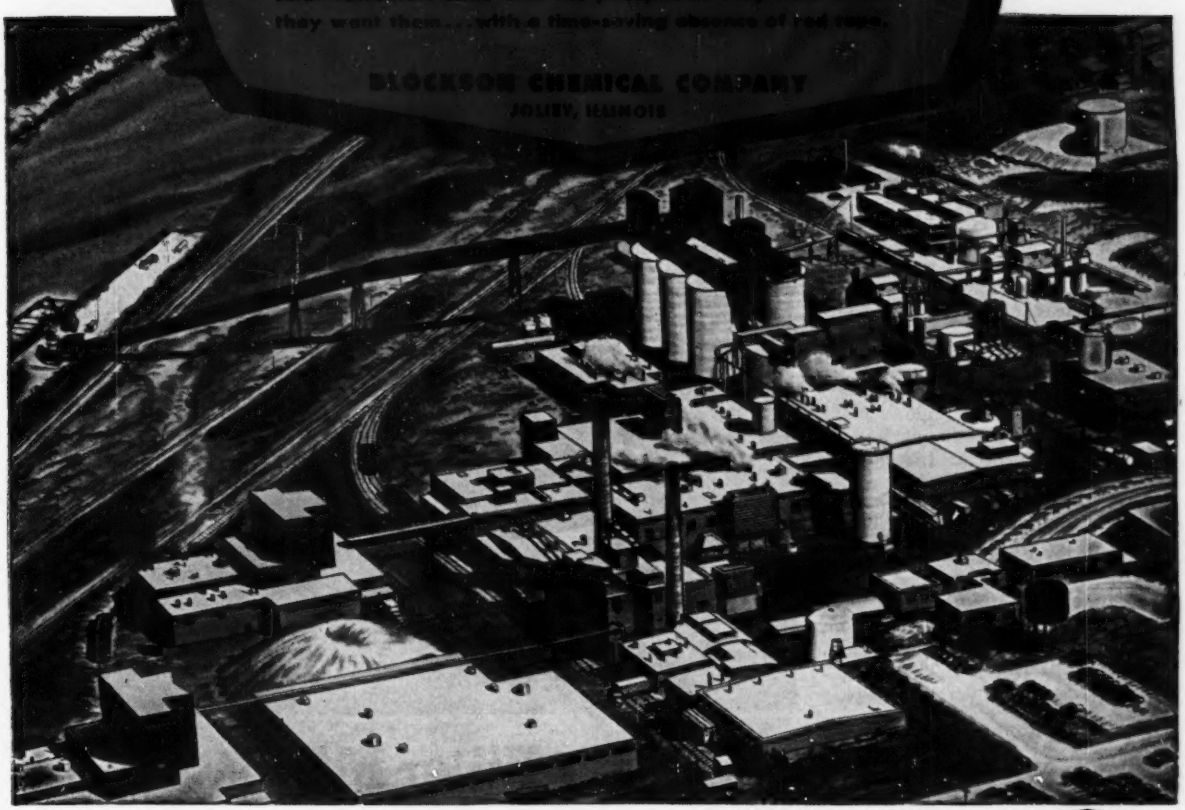


Blockson Plant . . . Joliet, Ill.

Sodium Tripolyphosphate
Tetrasodium Pyrophosphate, Anhydrous
Sodium Polyphos (Sodium Hexametaphosphate) (Sodium Tetraphosphate)
Trisodium Phosphate, Crystalline

- Chlorinated Trisodium Phosphate
- Trisodium Phosphate, Monohydrate
- Disodium Phosphate, Anyhdrous
- Disodium Phosphate, Crystalline
- Monosodium Phosphate, Anhydrous

- Monosodium Phosphate, Monohydrate
- Sodium Acid Pyrophosphate
- Sodium Silicofluoride
- Sodium Fluoride
- Hygrade Fertilizer

BLOCKSON

the current complexion of Argentina's budding chemical industry. With a highly civilized population approaching 20 million, and a largely fallow land area of some 1.8 million square miles, the country represents a prime long-term market—and the domestic chemical makers have barely scratched its surface.

Here, in summary, is the extent of Argentina's chemical development:

• **Acids and alkalies.** Five electrolytic plants amply supply the country's need for chlorine—some is even exported to neighboring countries. But the equivalent caustic soda represents only 60% of the domestic requirements. Moreover, there is no production of soda ash. The reason: raw materials are too widely scattered.

With two new plants—bringing the total to ten—the sulfuric acid market has been brought into balance. Domestic sulfur mines supply 25% of the country's requirements, but it is high-priced. Other sulfur sources: zinc concentrates, oil sludge, imported brimstone.

All muriatic acid is made synthetically from chlorine and hydrogen, five plants supply the need. Requirements of nitric are supplied by four plants using Chilean nitre and sulfuric acid.

• **Inorganics.** Fertilizer materials, in general, fall far short of domestic needs. With only one synthetic ammonia plant, there is virtually no production of nitrogen-carrying agricultural products. Moreover, the country lacks any developed phosphate or potash deposits suitable for processing.

In contrast, the country is more than self-sufficient in boron derivatives. Both boric acid and borax are reportedly available for export. The same is true for calcium minerals—limestone, gypsum, etc. Three plants are able to produce the nation's requirements of calcium carbide for production of acetylene.

Barium, strontium, zinc, tungsten, iron, and copper minerals are available, but they are largely underdeveloped. In many cases, the salts of these metals are imported. However, in the case of chromium, aluminum, titanium, and tin, Argentina's position is very weak. The prospect for self-sufficiency in derivatives of these metals is remote.

• **Organics.** The long-term growth of Argentina's organic chemical industry is hampered by the lack of satisfactory coal and the paraffinic nature of its domestic petroleum. As a result, most of the organics that are produced are those that come from agricultural raw materials.

High on the list, therefore, are fermentation products like ethyl alcohol, acetone, citric acid, and penicillin. In general, there are ample supplies of ethanol derivatives such as acetic acid, ethyl ether, and ethyl acetate.

Petroleum derivatives are limited to isopropanol and a small production of aromatic solvents made in a government-controlled cyclization plant. Virtually all coal and coal-tar derivatives are imported.

This general weakness in basic chemicals is reflected in the undersupply of most chemical end-products, including plastics, detergents, dyestuffs, pigments, pharmaceuticals, and synthetic yarns. But it also provides an opportune target for American chemical know-how and products—if and when Argentina again proves that it wants to do business with the United States.

Sales Changes

Reorganizations, new agencies, and consolidations highlight the news this week. Here are some of the recent sales changes:

• Monsanto Chemical's Plastics Div. has created a new "industrial resins" sales section, bringing the total number of such product groups to seven. Edmond Maur will be sales manager for the new organization.

• Du Pont's "Kinetic" Chemicals Div. is setting up a Mid-Western district sales office to handle the sale of Freon for aerosol propellants.

• The creation of Eastman Chemical Products, Inc. (*CW, Jan. 10*) will not mean any drastic revision in the Tennessee Eastman and Texas Eastman sales programs. The established Tennessee group had already been handling the sale of the Texas division's products; therefore the new company, with responsibility for the sales of both divisions, is primarily a recognition of the *status quo.*

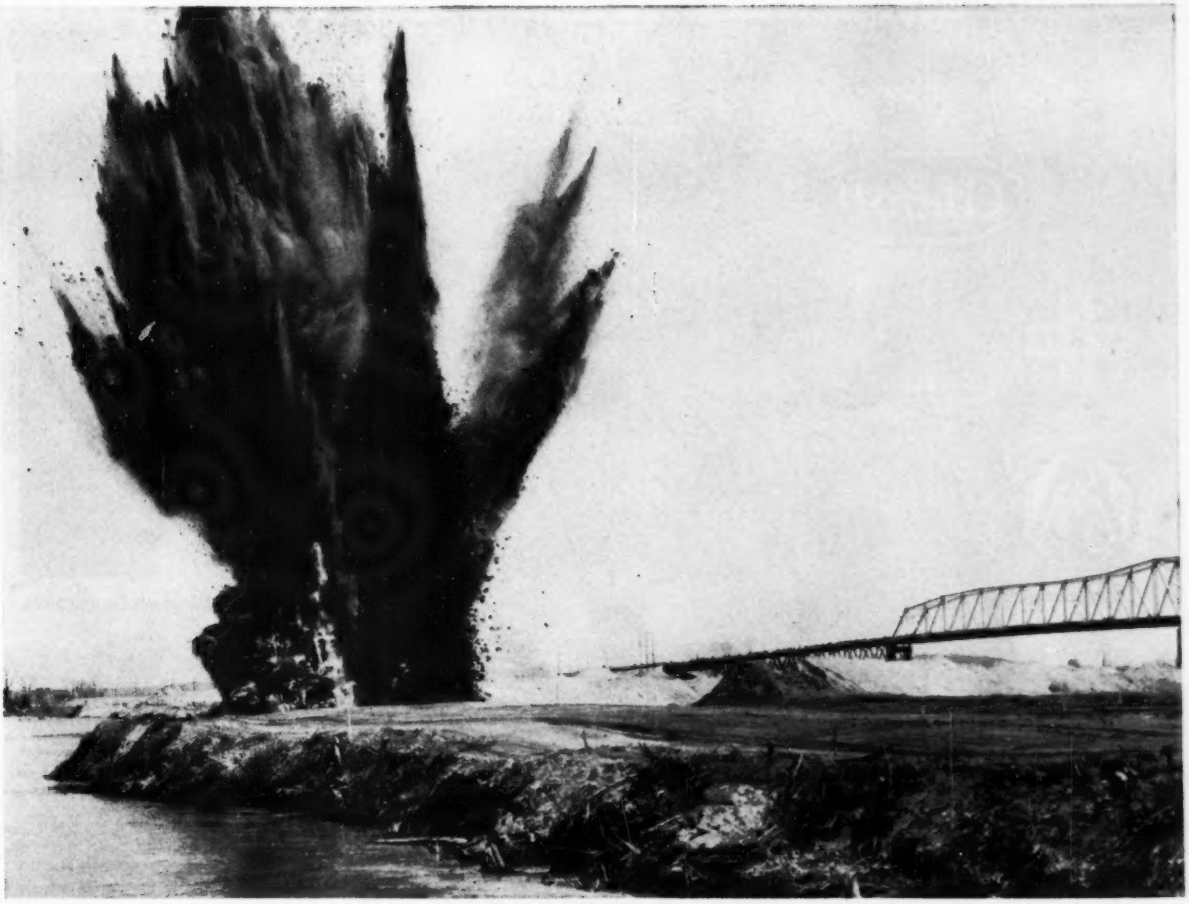
• The chemical division of Frank Samuel & Co. (New York City), has been appointed exclusive representative in this country for Holland's "De Meijerij" G. A., manufacturer of milk sugar caseins and feed products.

• Cleveland's Cowles Chemical Co. has chosen the Virginia-Carolina Chemical Co. (Richmond, Va.) as its Southeastern U.S. distributor of anhydrous detergent silicates.

• Pennsylvania Salt has appointed the Cleveland Industries Co. as its northern Kentucky and Ohio representative on corrosion-resistant cement mortars and coatings.

Cylinder-Filler Moves South

ATLANTA's Tesco Chemicals, Inc., which claims to be the largest chlorine and ammonia distributor in the South (since acquiring Mathieson's Southeastern cylinder-filling facilities), has opened two more plants. These are at Tampa, Fla., and Thomasville, N. C. Pictured above at the Tampa opening are (*l. to r.*) Tesco's President T. E. Schneider, Vice President F. E. Cooper, and Sales Supervisor J. T. Wilson.



They're Moving The Mighty Mo — With Chemicals

They call her Mighty Mo . . . a restless, headstrong kind of river that has her beginning somewhere in the Rockies above Montana . . . a relentless kind of river that boils and bolts, and finally dumps her cargo of mud and muck into the Mississippi above St. Louis.

They call her Mighty Mo . . . a strong-willed kind of river that, likely as not, will decide to change her channel tomorrow morning; *has,* in fact, on many occasions. But Mighty Mo got a surprise recently when a group of engineers decided to change her channel *for* her — with explosives. You see the result here in this dramatic photograph of the Liberty Bend opening near Liberty, Missouri. More than 2,500 pounds of explosives were used in this blast.

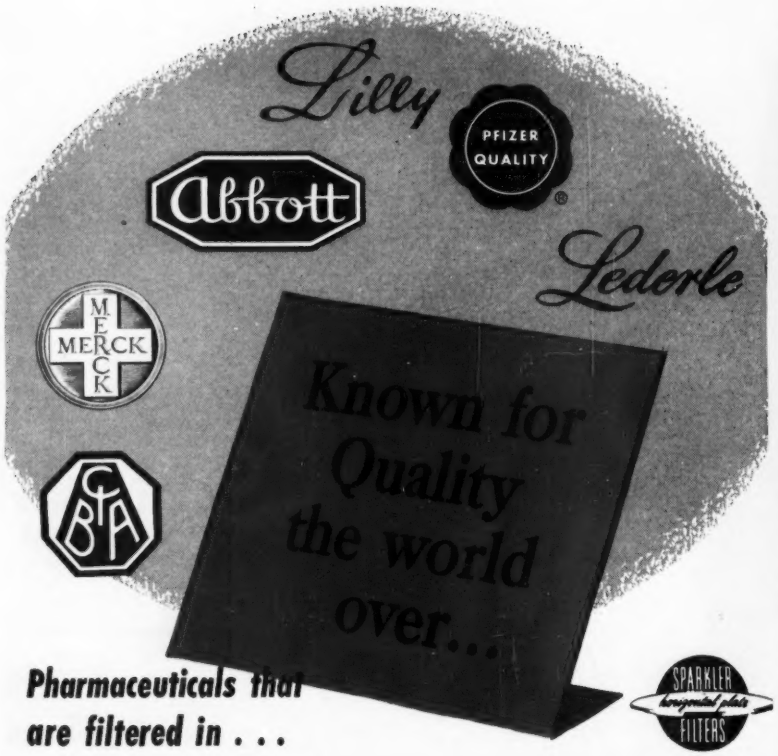
Time after time all of us have watched mighty forces of nature put into harness through the skill of engineers working with explosives — explosives made from chemicals. Spencer Chemical Company plays a part in such operations because Spencer produces vast quantities of commercial grade anhydrous ammonia—ammonia frequently used to manufacture nitric acid for the explosives industry.

With the completion in late '53 of a new $16,000,000 plant at Vicksburg, Mississippi, Spencer may be in a position to add some additional ammonia customers. Why not talk over your needs with us?

SPENCER

America's Growing Name In Chemicals

Spencer Chemical Company, Executive and General Sales Offices, Kansas City, Mo. Plants located at Pittsburg, Kans.; Henderson, Ky.; Charlestown, Ind.; Chicago, Ill.; and Vicksburg, Miss. (under construction).



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Each company whose trade-mark is shown above has, for many years, produced medicinals meeting the highest attainable standards. As a result, their reputations are based on what amounts to a public trust that products bearing these trade-marks can be used with complete confidence. To protect their positions of leadership, these manufacturers employ every conceivable safeguard to assure unvarying purity.

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Survey Salesman

Happily totting up the results for its second full year in business, New York's John T. Fosdick Associates is this week viewing with satisfaction a 500% increase in gross income over the previous twelve months. For a budding young market research group which specializes in surveys, it spells an optimistic future.

The growth, however, contrasts strangely with John Fosdick's own analysis of the company's success: "The main thing we have to offer is that we're small and flexible."

As an ex-chemical salesman and ex-chemical-journal staffer, Fosdick's activities to date have been centered largely on problems facing the chemical industry's sales and advertising managers.

Industrial Interviews: With "surveys" as the cornerstone of its research edifice, the company has been rapidly building up a national network of part-time interviewers who have an industrial – and preferably chemical–background. Advantage: The interviewers, in talking with industrial and commercial executives, can direct the discussion beyond the prepared questionnaire in case a valuable channel of information is unearthed. This is particularly important in preparing market-research data leading to new-product or new-expansion decisions.

One feature of the company's direct-mail surveys is that repeated mailings are sent out–ranging up to six repeats–until the percentage of returns reaches a statistically satisfactory level. All questionnaires–both

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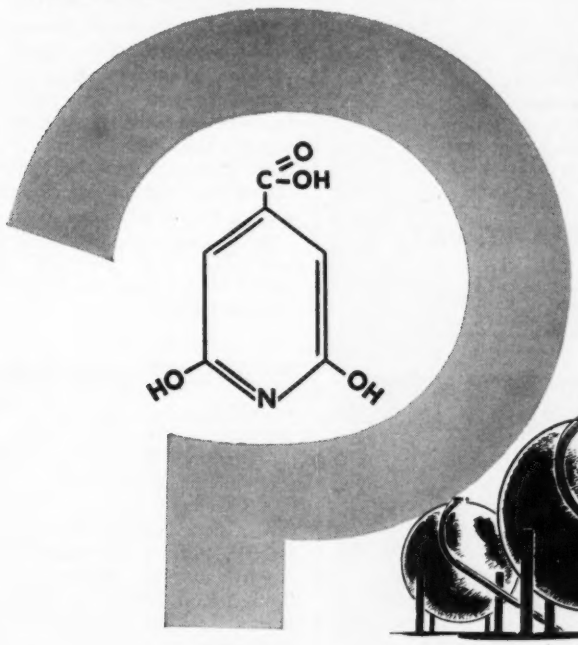

● CITRAZINIC ACID—"CZA"—is an organic acid having a high degree of functionality which makes possible reactions not readily achieved with other available pyridine bases.

"CZA" opens new vistas for research in pharmaceuticals, agricultural chemicals, dyestuffs, graphic arts, metal treatments, coating compositions and many other chemical processing industries.

The personnel of Pfizer's Technical Service Department is at your disposal to assist in your work with "CZA."

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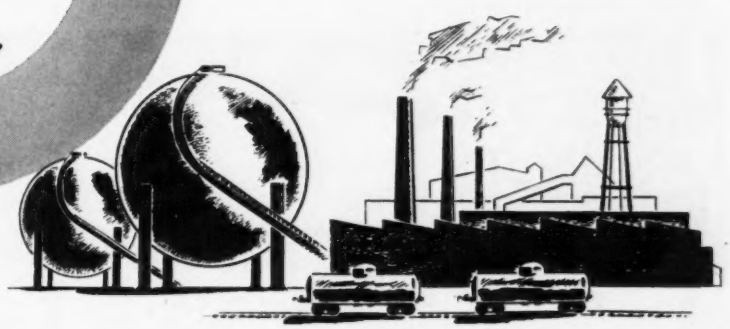

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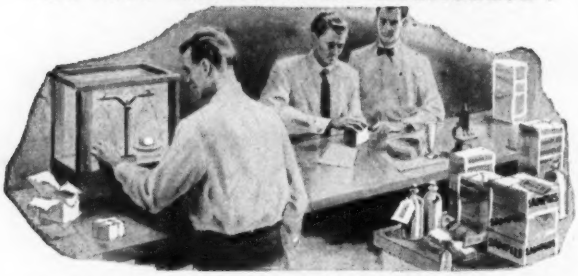

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for direct mail and personal interview—are pretested in the field for effectiveness.

Showing at Shows: Another specialty is testing of the elusive effect which trade-show exhibits have on industrial buyers. As a pioneer in this field, the Fosdick organization has worked out methods to determine:

- Who goes to the shows, and what benefits they expect to gain from them.
- Which exhibits prove to have the largest drawing power, and why.
- The effect of give-aways, free literature, and "games."
- The optimum number and type of personnel needed to properly man the exhibits.

Moreover, because shows and conventions each tend to attract certain professional groups, they provide a convenient—and cheap—polling place for personal-interview surveys. It eliminates the chief difficulties of such tests: the geographical distribution of the subjects and the lack of uniformity among the interviewers.

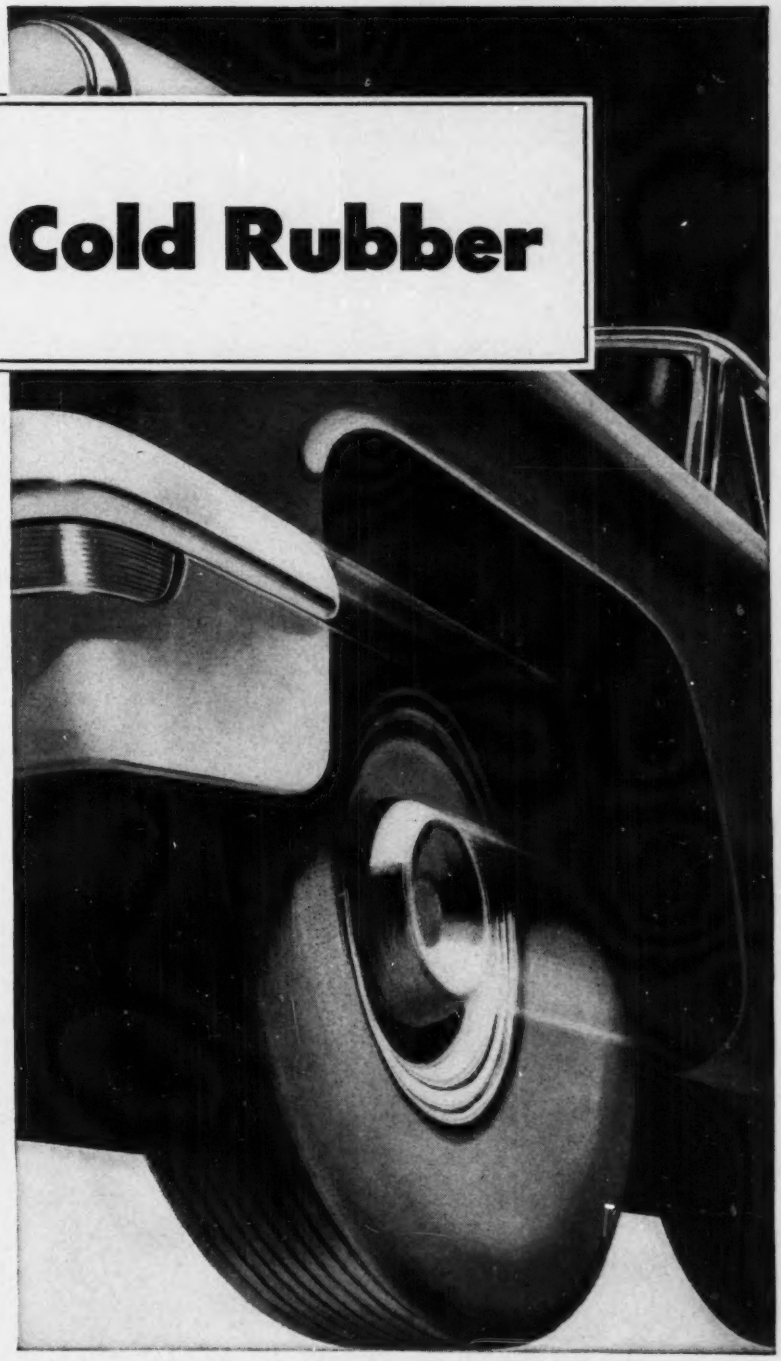
By concentrating on such little-used techniques and methods, Fosdick hopes to maintain his present rapid rate of growth.

Product Promotions

Booklets, pamphlets, and bulletins continue to pour forth from the industry's sales departments. Here are a few of the recent ones:

- General Chemical's Bulletin SF-6-A, a data book on the gaseous dielectric, sulfur hexachloride.
- Chemo Puro Manufacturing Co. (Long Island City, N.Y.) has issued its Spring 1953 Price List of fine chemicals.
- Technical Data Sheets 13 and 14, on acetone and dibutyl phthalate respectively, available from Commercial Solvents Corp.
- "Pack to Attract," a revised book on the promotional possibilities of corrugated boxes, published by The Hinde & Dauch Paper Co. (Sandusky, Ohio).
- Ethyl Corporation's "Sodium Hydride Descaling," a four-page brochure on the use of sodium hydride in the descaling of metal surfaces.
- "Wyandotte Caustic Soda Booklet," a 56-page treatise on the manufacturing, shipping, handling and analyzing of caustic soda. Michigan Alkali Div., Wyandotte Chemicals Corp.
- A one-page data sheet on fourteen types of cetyl, oleyl, and stearyl alcohols (Cachalot brand products), available from M. Michel and Co. (New York City).

Shift to Cold Rubber



CHEMICAL PROBLEM . . .

. . . automobile tires that last longer under the heat and abrasion caused by today's higher operating speeds.

SOLUTION . . .

. . ."cold rubber", so called because it is made at 5° C. Cold rubber production requires a special emulsifier to bring together its basic ingredients—butadiene and styrene—under refrigerated conditions. The emulsifier found most satisfactory today, as when GRS-10 was introduced in World War II, is Dresinate®—one of many chemical materials produced by Hercules for the rubber industry.

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. . . tough, synthetic rubber that can be economically produced in quantity from readily available materials. Now used extensively for the treads of passenger car tires, cold rubber is also proving itself in truck service, for machinery belting, and other places where operating heat and abrasion combine to promote rapid wear.

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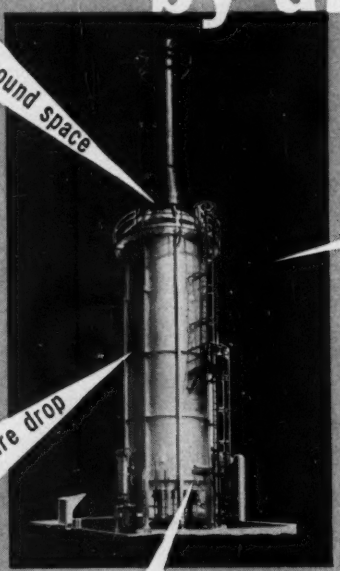

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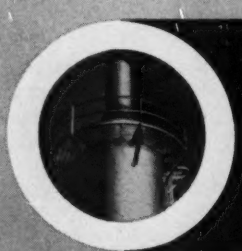

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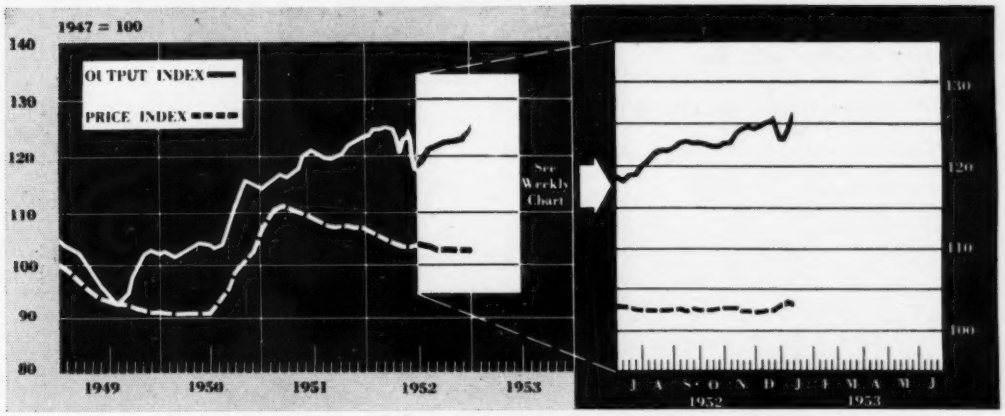
MARKETS . . . . . .



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

MARKET LETTER

The two varieties of benzol are moving closer—pricewise. As a result of a tight market coal-tar producers marked up their tags a cent a gallon.

But petroleum benzol is standing pat on prices. Makers say they won't cut prices to grab a bigger slice of the market—yet. And with a couple of big benzol plants recently converted to acutely-short toluol, chances are the remaining producers won't need to drop prices to dispose of their output.

The recent 20% price cut in synthetic vitamin A looks like a strong bid to entice more of the users of natural to switch.

Official reasons advanced for the drop: Improved manufacturing methods; savings from increased production stemming from margarine fortification demand.

Herbicide formulators are buying their sodium chlorate heavily now—and that's good for producers. The more orders they can get out of the way before the April rush, the less delivery delay later. There's no over-all shortage, however.

Lead pigment makers, recovering their equilibrium after the Federal Trade Commission's cease and desist haymaker, are getting ready to defend themselves. Plans are underway to appeal the FTC decision which holds that the companies violated the law by their selling methods.

Odds are that pigment prices will not be directly affected by the FTC wallop until after the appeals are ruled upon—which may take some months at least.

But other factors—including pig lead tags—have some of the pigment prices fluctuating all over the market. At the moment lower pig lead (14¢/pound) has caused a ½¢/pound cut in litharge, red lead, orange mineral and lead monosilicate schedules.

The new prices are not guaranteed to remain firm. They may change again before you read this.

On the other hand the pyridine market continues a model of immutability—high demand, supplies too short to go around. But most sup-

WEEKLY BUSINESS INDICATORS	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	126.5	126.0	125.0
CHEMICAL WEEK Wholesale Price Index (1947=100)	103.3	103.1	110.1
Bituminous Coal Production (daily average, 1,000 tons)	1,592.0	1,539.0	1,960.0
Steel Ingot Production (1,000 tons)	2,234.0	2,238.0	2,071.0
Stock Price Index of 14 Chemical Companies (Standard & Poor's Corp.)	258.6	262.3	245.1

MONTHLY INDICATORS—WHOLESALE PRICES (Index 1947-1949=100)	Latest Month	Preceding Month	Year Ago
All Commodities (Other than Farm and Foods)	112.9	112.8	114.6
Chemicals and Allied Products	103.3	103.2	108.4
Industrial Chemicals	112.3	112.7	120.8
Drugs and Pharmaceuticals	91.3	91.9	95.2
Fertilizer Materials	113.0	111.1	108.9
Oils and Fats	52.8	53.1	61.5

pliers are on the fence about following the lead of the producer who recently advanced his prices for refined material 10¢/pound.

It's a safe prediction, however, that most consumers—the lucky ones who can get pyridine—will be handed a 10% straight-across-the-board hike. Reason: Supply-demand factors are too strong to buck.

Sulfuric acid can now be had for the asking and even relatively tight areas (Detroit, Cleveland, Pittsburgh) will ease within the next few months as upcoming new capacity goes on stream. However, some sulfuric users may experience temporary snugness as the superphosphate season arrives next month.

There's a slowdown on the farm. And the farmers' hesitancy in taking mixed fertilizers is jamming mixers' storage space which in turn is cutting orders for ingredients.

Potassium muriate, ammonium sulfate—along with superphosphate—are also feeling the effects of the buyers' dawdling.

There will be a flurry of activity in the U. S. nickel market. DMPA's Jess Larson took a look at engineering tests proving possibilities of substituting ferro-nickel for the pure metal (in certain cases), felt justified in granting a $24.8 million loan, rapid tax amortization to Hanna Coal & Ore Corp. and Hanna Nickel Smelting.

The Government is contracting for 100 million pounds a year from the only known U. S. Deposit at Nickel Mountain, Ore. Reason, says DMPA: to encourage domestic nickel output.

The recent OPS allowance for a 3½¢/pound ceiling increase had nickel distributors in a tizzy—until they hit on the idea of dealing directly with International Nickel of Canada. Seems the OPS slipped up in granting no increase to International Nickel of New York.

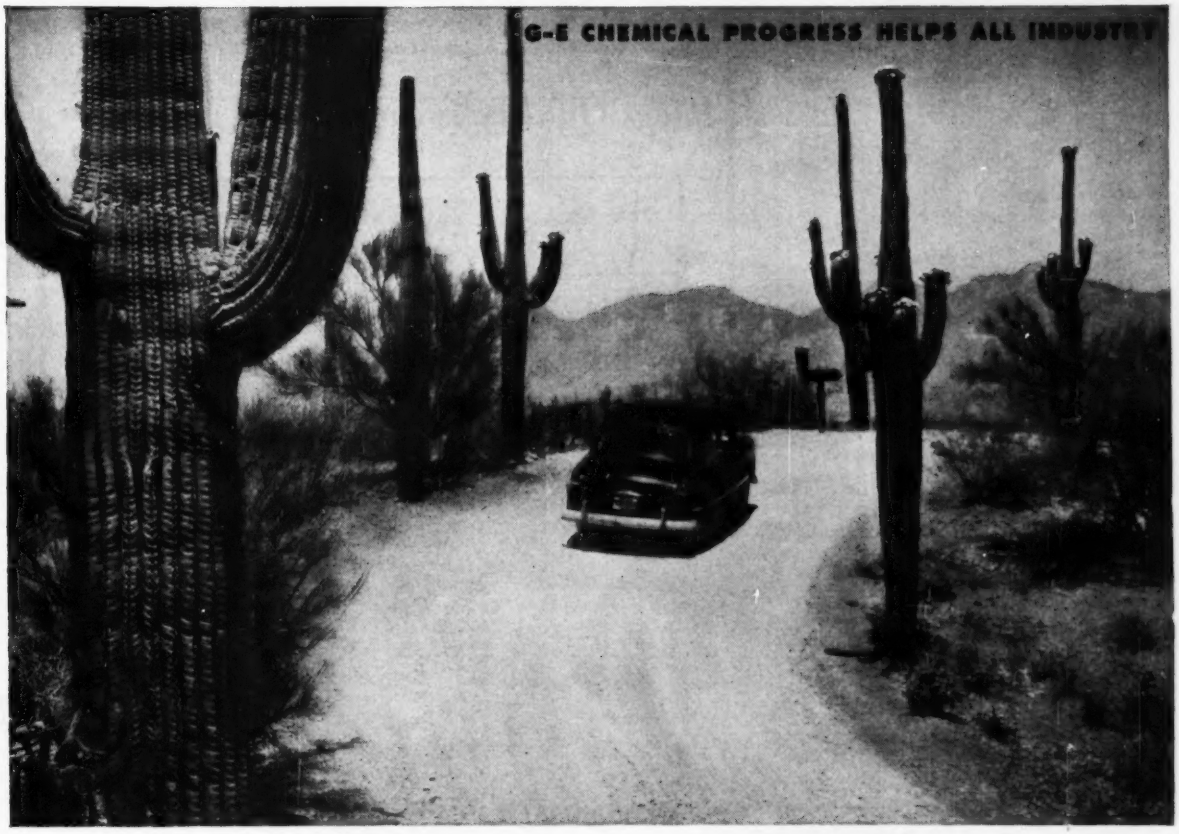
Nickel consumers, too, had reason for a slow burn--No pass-along hike was granted. Foundries, others using the metal, must apply on basis of individual operations.

Chlorine output is aiming high. Production for the latest reported month (October) was a neat 7,354 tons/day. The past year's record to shoot at is February's whopping 7,483 tons/day.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending January 19, 1953

UP	Change	New Price		Change	New Price
Glycerin, crude, 88%	$ .02	$ .34	Coconut oil, crude, t.c., f.o.b., Pacific Coast	$ .00875	$ .1675
DOWN	**Change**	**New Price**		**Change**	**New Price**
Pig lead, prime, N.Y.	$ .005	$ .14	Litharge, bbls., c.l., ship't point, frt. alld.	$ .005	$ .1575

All prices per pound unless quantity is stated.



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In all areas of the transportation field, automotive, aviation, railroad, and marine—and in many other industries—G-E silicone rubber, silicone fluids, and silicone resins have proven indispensable for many applications.

These are just some of the products of G-E *chemical* research—research that serves all industry. Just mail the coupon for a copy of "The Silicone Story"; or for more details on any G-E chemical development, write: *General Electric Company, Chemical Division, Section 300-ID, Pittsfield, Mass.*

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INSULATING MATERIALS • COATING RESINS
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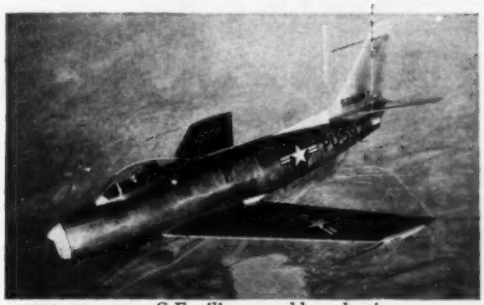

HELL ON ICE — G-E silicone rubber ducting connects metal tubing which carries hot air to de-icing systems in the F-86 Sabre Jet. High heat-resistance of G-E silicone rubber (to 500 F) provides a safety factor particularly important to aircraft. This rubber also resists extreme cold (—85 F) without cracking.

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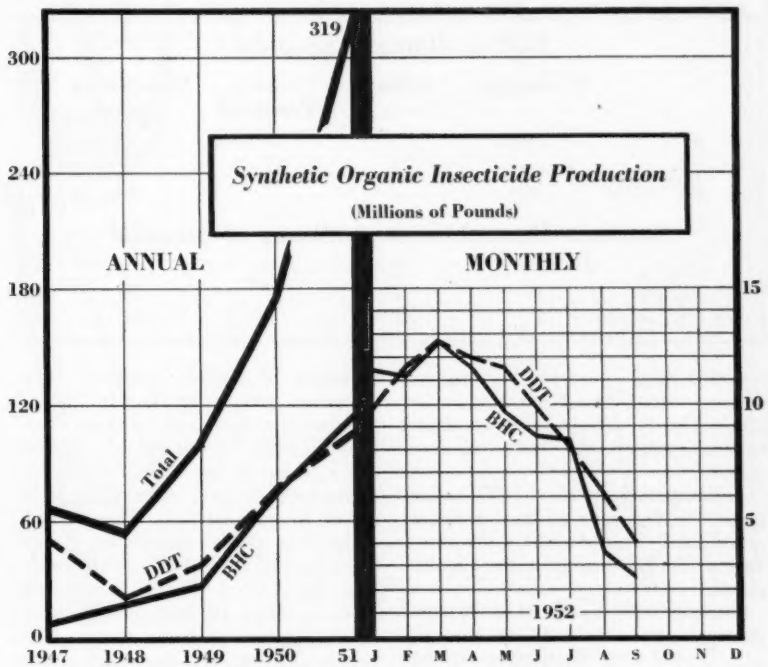


INSECTICIDES: After the fat years, the lean.

Insecticides Pile Up

Farmers, who chocked their outbuildings full of insecticides for last year's growing season, are now waiting for the bugs to come before stocking up again.

Producers, ignoring the insect-killing drought, kept piling up stocks for orders that never materialized.

Cheaper European material together with currency restrictions have dried up export market, added to the U. S. stockpile.

Last week brought more bad news for the insects: A plant to be built in Brazil will spew out 4 million lbs. of DDT next year.

As things stand today, some DDT makers also greeted the Brazilian announcement with less than enthusiasm —because DDT is one material definitely not on the shortage list. Right now the industry is suffering from over-growing pains that stem from 1950.

Moreover, other leading organic insecticides, such as benzene hexachloride, border on overabundance.

The production and sales records of the past couple years document the story. The table (*P. 58*) shows how two leading bug killers piled up.

Price histories, too, point up the present character of the market:

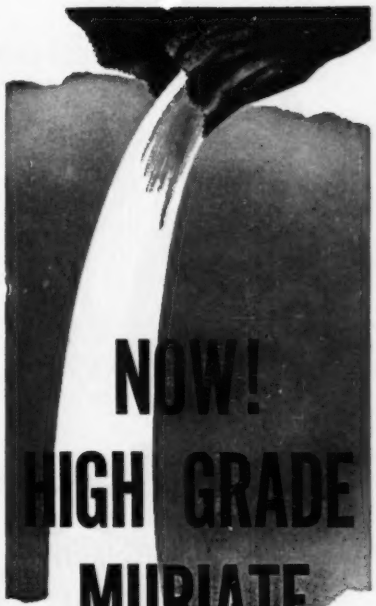
- DDT started the 1952 season at 50¢ per pound; now it's down to 25¢ or less (*CW Market Letters, Jan. 10, 17*).
- BHC prices have behaved similarly. Selling at 2.5¢ per gamma unit early in 1952, it is now trading at a shaky 1¢ per unit.

And even worse—limited tonnages of distress stocks have been peddled at half the going quotations. On top of that, several other volume insecticides besides DDT and BHC are heavily stocked and moving sluggishly.

Uncertain Future: Insecticide sales managers are almost unanimously pessimistic over 1953 prospects. To them, CW put the question "In your opinion, what are the chances of a good year in 1953?"

Typical replies:

- "If moisture is plentiful enough . . . and over-wintering insect population is high, we will have a normal demand for insecticides; nevertheless, supply will be in excess because of large inventories held over from the 1952 season."
- "The coming season is a big



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Send for your sample of CEN-OLEIC #1040 to make your own evaluation tests.

This new all-vegetable Oleic Acid has a color comparable to White Oleic, with superior color stability. The poly-unsaturate content is very low and results of the Mackey tests show over 6 hours to reach 105° C.

Study these specifications with relation to your special Oleic Acid compounding needs:

Iodine Value	84-92
Acid Value	191-195
Saponification Value	192-196
Titre: °C	15-20
Color (Lovibond 5¼")	15Y/3R max.

Other Century Oleic Acids

Century 1030 White Oleic (U.S.P.)	Titre 3- 5°C
Century 1020 White Oleic (U.S.P.)	Titre 8-10°C
Century 1005 Distilled Oleic	Titre 3- 5°C
Century 1010 Distilled Oleic	Titre 8-10°C

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DDT (millions of pounds)

	Production	Sales	Excess Produced	Cumulative Excess
1950	78	71	7	7
1951	106	94	12	19
1952 (est.)	98	70	28	47

Benzene Hexachloride (millions of pounds)

1950	77	68	9	9
1951	117	71	46	55
1952 (est.)	87	92	—5	50

question mark . . . we're keeping our fingers crossed about our chances in 1953. This is just about the most uncertain business we know of anywhere."

Incompatibility: This, DDT sellers opine, is the nub of the problem: established manufacturing capacity versus cyclic consumption requirements.

Back in 1950, as the U. S. Department of agriculture's H. H. Shepard has pointed out, production fell behind demand Serious insect infestation almost exhausted supplies by the end of the season. This unusual demand lured more firms into the field. The industry became both more complex and more competitive. Formulators and blenders leaped in to tap what appeared to be a fabulous market.

Under the same pressure, chemical companies which produced the basic materials expanded facilities, new operators sprang up. Result: Several plants constructed and ready for operation in 1952 did not operate, or only for a period of one or two weeks.

Nonetheless, still more capacity is slated to go onstream. Three cases: Geigy has almost completed a new plant for DDT and BHC at McIntosh, Ala.; Ethyl Corp. expects to complete early in 1953 its high-gamma BHC (lindane) plant at Baton Rouge; Kolker is enlarging its lindane facilities on the Houston Ship Channel.

No Repeat: Unfortunately for the insecticide makers, their ultimate consumers, the insects, failed to repeat their performance of 1950. Following that fat bug year came two lean years.

Philip Groggins, recently retired NPA Agricultural Chemicals chief, reasons that last year's bug failure came about this way: first stage—

Canadian Consumption of Nonionics

Industry	*% use in U. S.*	*% use in Canada*
Food, ice-cream emulsifier and	26%	2%
Household detergents	23	10
Insecticides and herbicides	16	3
Quarternary germicide cleaners	10	2
Textile	7	25
Cosmetics	4	0.5
Mobile laundry detergents	2%	2
Butadiene-styrene and resin-base water paints and pigment colors	2	10
Cuttings oils	1	0
Acidizing oil wells	0.6	0.5
Miscellaneous industries (incl. pulp, paper, rayon, etc.)	8.4	45

MAJOR VARIATION in the end-use pattern of Canadian and American nonionics is shown on the recent consumption chart made by E. H. Wolfe, Chemical Developments of Canada. Wolfe accounts for the paucity of the food industries' portion by the rigidity of Canadian food and drug laws; points out liquid detergents aren't yet widely used in Canada; says high textile use should continue, although it may drop in relative consumption position. Canada is producing about 800,000 lbs. of nonionics annually, compared to U. S. output of 45 million; maximum Dominion market is roughly pegged at 2½ million lbs.

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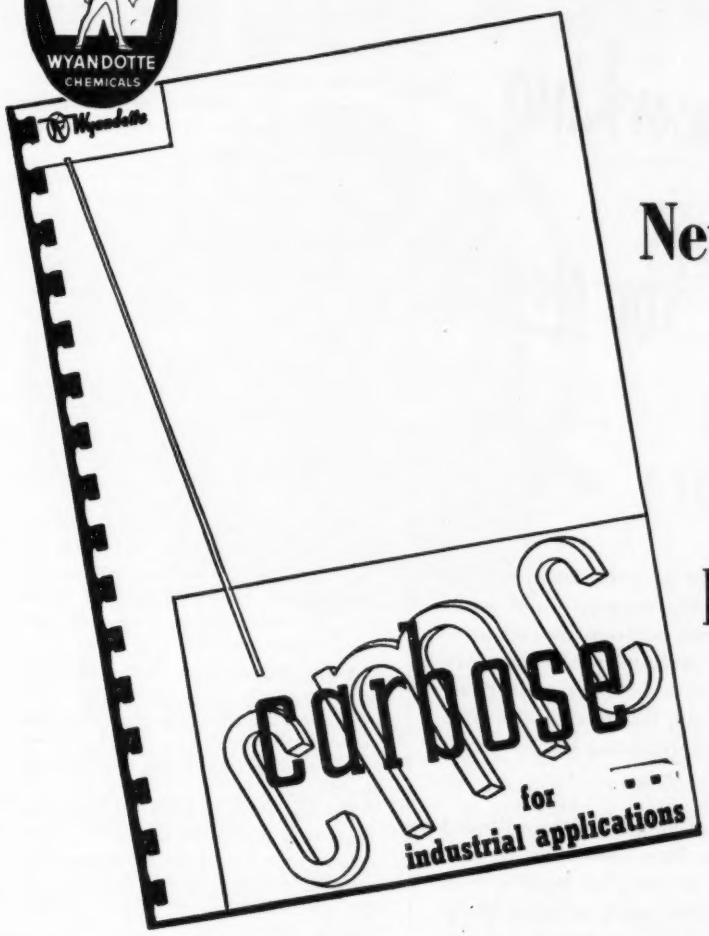

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early, heavy rains followed by warm weather brought out the insects; second stage—prolonged drought later in the year killed many of the pests by natural means, *i.e.*, without recourse to chemicals.

As the chart above shows, producers took little account of the second stage —the drought—until mid-1952.

By contrast, latest output figures show a comparative shutdown, with perhaps a mere 15% of DDT and BHC capacity in production.

Another strike on the insecticide sellers is the diminishing export demand. Two main causes for this situation:

- Foreign offerings are at low prices. (Germany, turning out BHC in high volume, are underbidding us for the South American market.)
- Currency restrictions in dollar-poor countries are discouraging exporters.

Effect: Although 1952 opened with a flurry, shipments (of DDT, for instance) after March dropped precipitously to a lower level. This quick fall, still unrecovered, may well portend a poor future.

Farm Education: The immediate sales outlook may seem lean. But pest control authorities are more concerned over another aspect of the insecticide problem—the attitude of the farmers.

For the farmers were bit last year. After they had piled up for the 1952 season, they found little use for their insecticide stocks. So now they're waiting for the bugs to appear before buying insecticides.

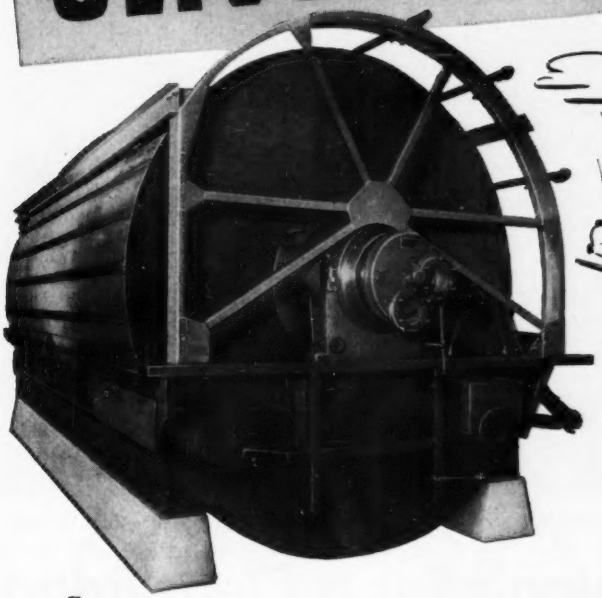
Help from Washington: U. S. government needs are moving some of the immediate surplus. Recently (*CW Market Letter, Jan. 17*) Uncle Sam ordered 4,400 metric tons of 75% DDT for early delivery.

Sellers are hopeful that further purchases are in the offing. If more is taken by the government, prices will be stimulated, to the relief of the manufacturers. For at the current low tag of 23¢ per pound, producers say they cannot make a profit. In some cases, the price may be even below manufacturing cost.

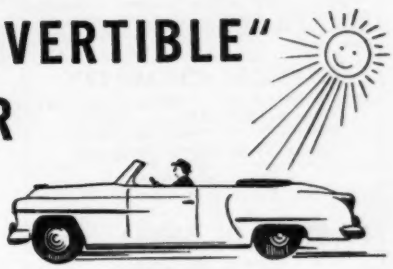
Later: Over the long range—assuming that farmers will practice forward buying, which can't be counted upon —insecticide supply and demand may come into better balance.

Right now, however, the scene is pretty dismal. To quote Lea Hitchner: "We are entering the 1953 season with higher than normal stocks, more than adequate plant capacity, curtailed production, and no indication of a desire to purchase."

OLIVER Panel FILTER



THE "CONVERTIBLE" FILTER



Let's suppose, for a moment, that you order this filter to handle a 'difficult-to-filter' product which tends to form either an exceptionally thin cake or a sticky, slimy cake that would soon blind the cloth. Such a cake calls for the Panel Filter — if you want to save the solids.

Then, two or three years later, your processing changes so that you needed to filter a product that would form a more normal cake, say, from ½ to 1 inch thick.

Would you need a new filter? Not necessarily. You can easily convert the Oliver Panel Filter to a standard Oliver Wire Wound Drum Filter, adding a scraper discharge which would probably be better for handling the thick filter cake. Foreseeing the possibilities of changing processes, several companies have recently purchased Oliver Panel Type Filters with this very possibility in mind. Perhaps the "convertibility" of the Panel Filter will be a major factor in your selection. Why not discuss it with one of our filtration engineers?

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SPECIALTIES . .

AFTER THE SNOWPLOW: For safe streets from skidroads, $10 million in salts.

Chemicals for a Clear Road

Chemical snow-removal aids are now getting a heavy workout, have moved into the $10-million-per-year class.

Rock salt's the mainstay; its use has opened the way for specialized corrosion inhibitors. And calcium chloride is used in quantity by street and highway departments.

The need remains for a permanent, non-corrosive, anti-ice agent that would obviate post-storm plowing.

Ice's nice—for chilling drinks and skating; but it's a serious problem on city streets and highways. The nation is now struggling with this wintertime hazard; hence chemicals that can help in snow removal take on renewed importance.

Far and away the most important chemical is simple rock salt—and it's important enough to sell at an estimated $10-million clip per year to street departments. Estimates place a winter's consumption at about 785,000 tons, and the quantity is going up annually as the advantages of its use are realized. But though salt has proved its value, there are still recurrent complaints about increased corrosion problems. These have given rise to a sizable market for inhibitors.

Still used in volume—small compared to sodium chloride—is calcium chloride, particularly helpful in extra cold weather. Another development, only recently put on a nationwide basis, is a mixture of inhibited calcium and aluminum salts known as Ice-Rem.

Auger Action: Price, physical form, availability, and effectiveness have all played a part in putting rock salt on top of the heap as an ice remover. The big crystals, which sell in quantity at about $12.50-$13.00 per ton, appear to bore through packed ice and snow, make brine on the pavement to loosen the ice. Fine-grained refuse salt is not as economical in action, although it is frequently cheaper.

Calcium chloride possesses an advantage in that it works in colder weather, but its cost has limited its application. It also appears not so well suited to street application, where traffic does the vital action of breaking up and slushing the packed snow after it has been chloride-loosened.

Both chemicals have gone far to supersede simple abrasives like sand or ashes. Sand is fairly expensive; ashes often blow off the highway, can't be transported economically. And both leave the streets dirty in the spring, clog sewerage systems.

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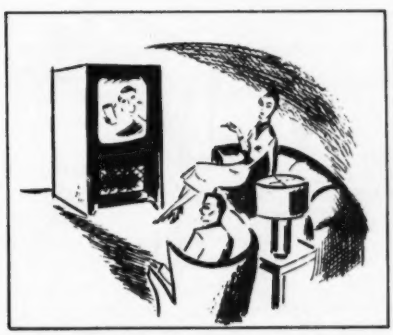

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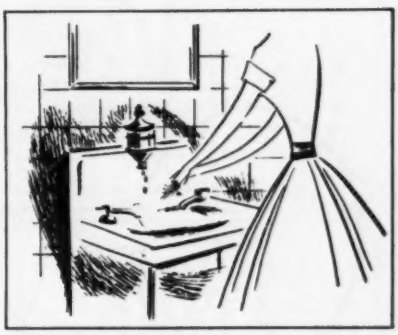

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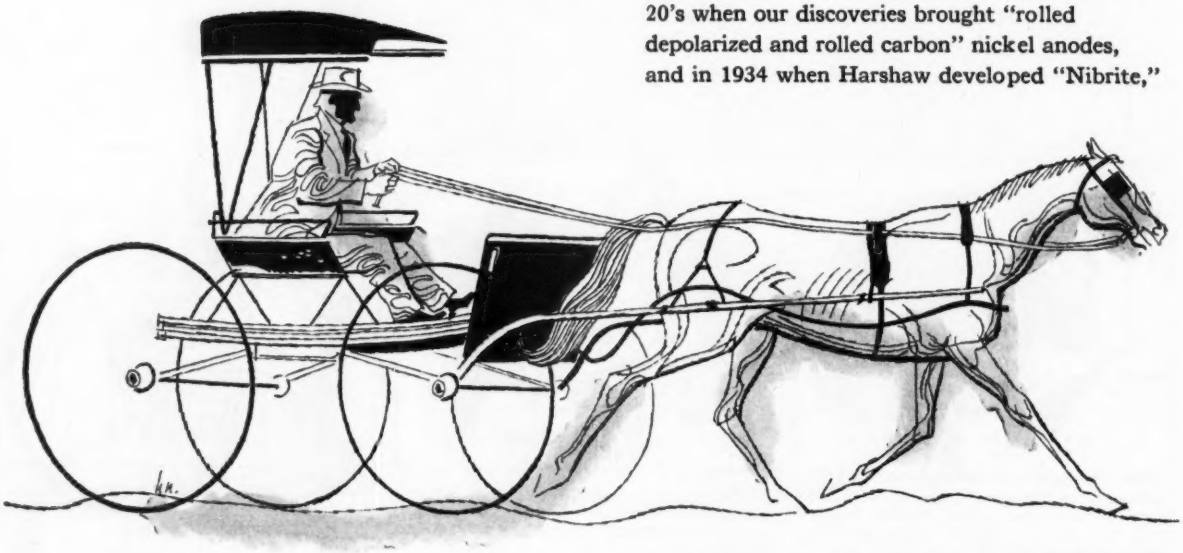

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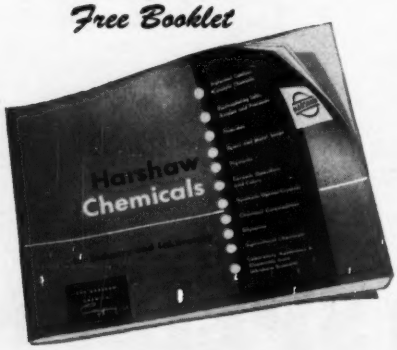

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Iceproof Paving

From Germany comes word of an interesting technique to keep roads clear of ice. Details are vague; here's the gist of what's available now:

Key to the method of four "simple" chemicals, and the inventor, an exceedingly publicity-shy Russian refugee, Dr. Rademacher, tabs his invention Electroswa Clorcatrinat 999. Mixed with asphalt, gravel, or any similar substance, it is claimed to prevent formation of ice on the surface, and to melt snow falling on it. Cost of the compound is about 8¢ per liter, and Rademacher figures cost to treat a sq. yard is about 9¢. According to the CHEMICAL WEEK German correspondent, the German Transport Ministry has data on the product, but refuses to make it public.

Rademacher claims to have applied for German and American patents, also says that the Persian Government has shown interest in his EC-999. Further, that an American highway construction firm (unidentified) is checking on it. EC-999 is said to be non-corrosive, affecting neither the durability of the paving surface nor that of the rubber tires in contact with it. To give EC-999 a real test, the German Transport Ministry may build a five-mile stretch of highway near Rademacher's home in Buettel, Germany.

troversy for years since the introduction of widespread use of chemicals is whether or not the salts speed corrosion of automobiles and steel structures like bridges, or whether they cause spawling of concrete paving surfaces.

Salt companies naturally have amassed considerable evidence that the amount of brine produced in street clearing operations does not materially shorten automobile life—that the major part of the corrosion is due to atmospheric action. And increasing use of air-entrained concretes indicates that a properly made concrete is unaffected by salt.

Nevertheless, because truly complete data and testing on this phase of corrosion aren't available, and because there is still a wide variance of opinion, several inhibitors have been placed on the market for use on the streets with the chemicals.

Chromates were among the first compounds tried. Akron, O., did considerable testing using up to 200 pounds of sodium dichromate per ton of salt (on most roads, 500 pounds of salt per mile is an effective average application). This was later cut down, as a 2% mixture was found most effective, materially reducing the corrosion of automobiles and steel structures.

But chromates are often in short supply, and are somewhat toxic in addition (Akron reported no complaints, however). To fill the gap, Calgon, Inc. (division of the Hagan Corp., Pittsburgh, Pa.), came up with Banox, which it describes as a "vitreous metaphosphate compound." It's non-toxic, and according to Calgon, cuts corrosion 80-90%. Some 100 communities are on the buy list this year.

Another polyphosphate-type corrosion inhibitor is National Aluminate Co.'s (Chicago) Nalco 818-C. It is a polyphosphate-nitrate-nitrite combination used not only on roads, but with salt on industrial plant walks, railroad platforms, etc.

Both Nalco 818-C and Banox are generally used at a 1% ratio with salt. Even at that small percentage, however, they materially boost the expense of using salt. Banox will hike the salt cost more than 20%.*

Still another approach has been that of Speco, Inc. (Cleveland). Now nationally sold is its Ice-Rem, which is described as a compound of aluminum, potassium, and calcium, with a phosphate inhibitor. Sold in pellet form (100-pound drum costs $12.99) it is aimed mainly at the individual buyer rather than the heavy-quantity road market, although it is available to mix with an aggregate for highway application. Speco claims Ice-Rem is many times more effective than the chlorides, points out that the product is harmless to plants and grass.

Speedy Spreading: Most effective use of chemicals for snow clearing depends on spreading the minimum of salt evenly. One commonly used dispersing unit is the Scotchman spreader made by Tarrant Mfg. Co. (Saratoga Springs, N. Y.)—which puts down the half-ounce of salt per sq. yard deemed ample for most snow conditions.

Even at that small application rate, a lot of salt is used. A city like Chicago spreads 600-700 tons per day to treat nearly 500 miles of streets after a storm. New York figures 30-40,000

* In carload quantity, Banox costs about $18.50 per 135 lb. drum at the place of manufacture, Ellwood City, Pa.

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Filters, 24" x 24" Sperry 21-Bronze Chambers; No. 12—36" Sweetland 72-Brass Chambers. South Texas Machinery Co., Inc., 4300 Dixie Drive, Houston 21, Texas.

Kiln, Rotary, 7'x160'x5/8" (2). Heat & Power Co., Inc., 70 Pine St., N.Y. 5. Hanover 2-4890.

Mills, Traylor tube, 5'x22", 5'x20", 4'6"x18'6" 4' x 13', stone lined, pebble charge (4). Consolidated Products, 18 Park Row, N.Y. 38, N.Y.

Mills, Day 14" x 30" 3 roll high speed roller (8) Consolidated Prod. Inc., 18 Park Row, N.Y. 38.

Mills, Mikro Pulverizer, #1SI-5HP AC. Jasper Machinery Co., 1123 B'way, N.Y.C. Ch 3-9010.

Motors in a hurry! Explosion proof. All sizes, new and rebuilt. Arthur Wagner Co., 1429 W. Randolph, Chicago 7, Ill.

Oliver Filter, 3' x 4' Phosphor bronze. Loeb Equip. Supply Co., 1927-A North Ave., Chicago.

Pebble Mills; 8'x8', Porcelain lined. First Ma- chinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Pebble Mills 10 gal. to 800 gal., porcelain lined 20. Consolidated Products, 18 Park Row, N.Y. 38.

Reactors, Pfaudler Jktd. 400 Ga. First Machinery Corp., N.Y. 13, N.Y.

Rubber Mill, 12" x 24" Birmingham. Loeb Equip- Supply Co., 1927-A North Ave., Chicago.

Tanks, 6 New 20,000 Gal. 5/16" thick. In N.J. & Mo. Lestan Corp., Rosemont, Penna.

Tanks, Alum, closed—330, 480 and 1450 gal. Perry Equipment. 1415 N. 6th St., Phila. 22, Pa.

Tanks, Pfaudler, 500 Gal., SS, Mixing. Process In- dustries, 305 Powell St., Brooklyn.

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Vacuum Pan, Mojonnier 26". Loeb Equip. Supply Co., 1927-A North Ave., Chicago.

Welding Platens, 5' x 5' sq. x 6" thick. 253 square holes on work surface. Stahl Equipment Co., 984 Washington St., Brookline 46, Mass.

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tons should last it through this winter, has that much stored in silo-like bins.* Leading the states in chemical consumption is Michigan, which lays down close to 200,000 tons of salt per year.

On the other hand, top user of the inhibitors appears to be Rochester, N. Y., which stocked up on close to 80,000 pounds of the metal-savers for use with its chlorides this winter on snowy streets.

Most cities that have employed chemicals find them far cheaper to use than simple abrasives. Some communities have tried heating sand, or mixing it with a chemical. For the most part, results seem to favor plain rock salt. And though the winter has been relatively mild so far, long-range predictions are for a tough one—it's a case where bad weather means a break for the chemical supplier.

More for the Farms

Planned for construction in New Albany, Ind., is a new fertilizer plant for Davison Chemical Corp. The $1-million plant will replace 60-year-old facilities Davison already has there, and should be in production of a granulated mixed fertilizer by fall. The new location won't be vulnerable to the floods of the Ohio river, which have inundated the old plant a number of times.

• Weeds, not floods, are the problem troubling Hawaiian sugar planters—and they'll be getting chemical help. Du Pont's CMU herbicide has been approved for pre-emergence use with sugar cane by the USDA's Production and Marketing Administration. Five pounds of CMU per acre is the recommended dosage.

• Another weed killer, Tumble-Weed 25, is now being sold by the Eston Chemicals division of American Potash & Chemical Corp. A non-selective herbicide, it is 25% sodium chlorate and 75% soluble borates.

•

Paints and Coatings: The Eagle-Picher paint plant in Atlanta, Ga., has been purchased by the Glidden Co. (Cleveland, Ohio). The plant, closed by Eagle-Picher in its move to discontinue paints and varnishes (*CW, Jan. 17*), will be fitted with new equipment to double its capacity, and a new office building and warehouse are to be built on an adjoining 5-acre tract.

• Not adding to its facilities, but to its products is Furane Plastics, Inc. (Glendale, Cal.). It is offering a new coating material called Furane Resin Surface Coating, Type X-5, claimed to provide an alkali- and acid-resistant coat for various metal surfaces. It gives a black, heat-cured film.

•

Glass Laminate: Made with melamine resins, a new glass mat laminate has been developed by Synthane Corp. (Oaks, Pa.). Cost is said to be under that of continuous filament glass-base materials, although it is claimed to match their electrical properties.

•

The Berries: Extra-size strawberries, produced by application of beta-naphthoxyacetic acid, have been test grown at the Oregon State College experimental farms, and similar tests have been run at Michigan State College.

•

Plant for Park: Park Chemical Co. (Detroit, Mich.) has acquired new manufacturing and warehousing facilities in Philadelphia to make heat treating and automotive chemicals.

•

Single Service Suds: Trav Co. (St. Louis) has popped up with a new angle in detergent packaging: It's putting a light duty detergent out in an attractive, plastic envelope which holds enough to do a light, quick laundry.

Trav, as it has been tabbed, is pushed for use by hotels—to be included with the soap and towels stocked in the hostel bathroom—and to the individual traveler. A box of twenty packets of Trav retails for about a dollar.

•

Two More: A couple of additional firms have joined the legal fight against price-cutting Schwegmann Brothers (New Orleans). Mathieson Chemical Corp. filed suit in The New Orleans federal district court in behalf of its E. R. Squibb Division.

• Lever Brothers Co.'s Pepsodent division has also jumped into the fray, charging Schwegmann with failure to observe fair trade minimum prices. Pepsodent seeks an injunction to halt the big supermarket from selling Pepsodent products below established prices. It makes the sixth firm to line up against Schwegmann.

•

Hot Roof: U.S. Rubber Co. has developed a new product to simplify radiant heating in homes. It is a 1/16-inch paneling of plastic and aluminum foil called Uskon. Bonded to ceilings, the panels weigh only 6 ounces per sq. ft., draw about 22 watts/sq. ft.

* New York's storage methods have posed a problem—how to keep the naturally hygroscopic salt from caking in the silos. Tests are currently being made with several compounds to reduce crusting—cornstarch is recommended by the supplier, International Salt Co.

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Hum Does the Work

WASHING WITH SOUND seems to be catching on. Displayed in Chicago last week was the Electro-Sonic (*above*). Soap and detergent makers needn't worry; some sort of chemical washing aid to keep dirt in suspension is still required. Fairbanks Ward Industries, Inc. (Chicago), is selling the device made by Mitchell Mfg. Co. under Australian patents. The Electro-Sonic ($39.95) resembles in principle the Bosch Schallwascher (about $34 in Europe), sold in Germany for several years (*below*).

Any tub—even a bathtub—can be used. The washer is simply plugged in and lowered into the water; sound at 100 vibrations per second (about F, two octaves below middle C) gently shakes the dirt loose from the fibers.

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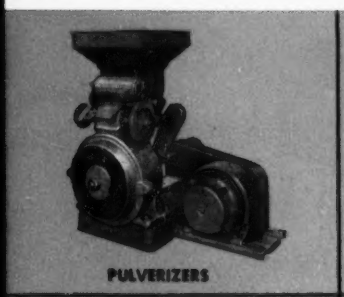
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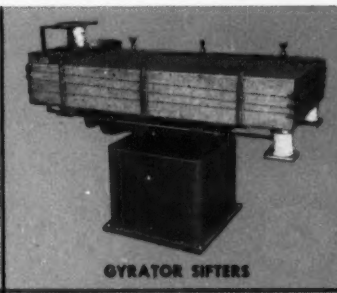
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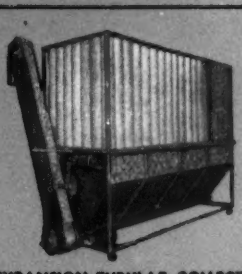
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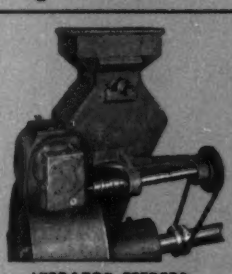
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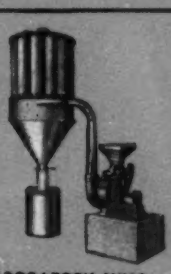
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